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FLUID EXTRACTS OF THE NEW PHARMACOPŒIA.

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In this, perhaps the most important class of officinal preparations, great changes and many additions have been made; therefore a brief review of these changes and additions seems desirable.

In the table herewith presented, the attempt has been made to compare the list of fluid extracts of the new Pharmacopœia with the list recommended to the Committee on Revision by the Philadelphia College of Pharmacy; in this list the finished preparation represented the drug weight for weight, as it was found to be entirely practicable to make all of the fluid extracts recommended by that method. The difference in strength and necessary dose, from those made by the old method of grain to minim, or by that now officinal of gramme to cubic centimeter, is in most cases quite unimportant, perhaps in no case equaling the variations in quality met with in the drugs from which fluid extracts are made.

The decision of the Committee of Revision to make the finished product represent the drug volume for weight, appears to be an entirely unnecessary exception to the general plan of the Pharmacopœia; in all other respects, no doubt most of the formulas will prove satisfactory, and with perhaps one exception, the required manipulations are exceedingly simple, and can be readily carried out by any pharmacist.

It will be observed that although the finished product is volume for weight, the menstruums are all prepared with parts by weight.

The Philadelphia College of Pharmacy recommended formulas for seventy-eight fluid extracts, of which number forty-six were those of the old Pharmacopœia and thirty-two were new; of these all the old except two were retained, and twenty-four of the new ones adopted by the Committee of Revision; they also added eleven more new ones to the list, making the total number of officinal fluid extracts seventy-nine.

List adopted by the Committee of Revision and Publication.	Recommended by the Philadelphia College of Pharmacy.	Fineness of Powder.		Glycerin.		Menstruum.		Parts to Moisten.		Reserve Percolate.		Additions to Menstruum.	
		Com.	P.C.P.	Com.	P.C.P.	Com.	P.C.P.	Com.	P.C.P.	Com.	P.C.P.	Com.	P. C. P.
EXTRACT. FLUID.	EXTRACT. FLUID.												
Aconiti	Aconiti Radicis	60	60	.....	.....	Alcohol.	Alcohol.	40	40	90	90	1 part Tartaric Acid.	
Arnicæ Radicis	Arnicæ Radicis	60	40	.....	.....	A1. W1.	A1. W1.	40	40	90	80		
Aromaticum		.....	.....	.....	.....	Alcohol.	.....	35	.....	85	.....		
Aurantii Amari	Aurantii Amari Corticis	40	40	.....	.....	A2. W1.	Alcohol.	35	35	80	90		
Belladonnæ	Belladonnæ Radicis	60	60	.....	.....	Alcohol.	A2 W1.	35	35	90	85		
Brayeræ	Brayeræ	40	40	.....	.....	Alcohol.	Alcohol.	40	50	90	80		
Buchu	Buchu	60	50	.....	.....	A2. W1.	A2. W1.	30	35	85	80		
Calami	Calami	60	40	.....	.....	Alcohol.	Alcohol.	35	35	90	95		
Calumbæ	Calumbæ	20	30	.....	.....	A1. W1.	A2. W1.	30	30	70	75		
Cannabis Indicæ	Cannabis Indicæ	20	30	.....	.....	Alcohol.	Alcohol.	30	35	90	90		
Capsici		60	.....	.....	.....	Alcohol.	.....	50	.....	90	.....		
Castaneæ	Castaneæ	30	40	.....	20	Water	A1. W2.	500	50	.....	75	60 and 20 parts Alcohol.	
Chimaphilæ	Chimaphilæ	30	40	10	20	A1. W1.	A1. W2.	40	30	70	80		
Chiratæ	Chirettæ	30	40	10	.....	A1. W1.	A1. W2.	35	40	85	75		
Cimicifugæ	Cimicifugæ	60	50	.....	.....	Alcohol.	Alcohol.	25	35	90	85		
Cinchonæ	Cinchonæ	60	60	25	20	Alcohol.	A3. W1.	35	30	75	80	A3. W1.	
Colchici Radicis	Colchici Radicis	60	50	.....	.....	A2. W1.	A1. W1.	35	35	85	85		
Colchici Seminis	Colchici Seminis	30	60	.....	.....	A2. W1.	A2 W1.	30	30	85	90		
Conii	Conii Fructus	40	40	.....	.....	A1. W1.	A1. W1.	30	30	90	80	3 parts Dil. Hydrochlor. Acid	1 part Hydrochlor. Acid
Cornus	Cornus Floridæ	60	40	20	20	A1. W1.	A1. W1.	30	35	85	75		
Cubebæ	Cubebæ	60	40	.....	.....	Alcohol.	Alcohol.	25	20	90	90		
Cypripedii		60	.....	.....	.....	Alcohol.	.....	35	.....	85	.....		
Digitalis	Digitalis	60	50	.....	.....	A3. W1.	Alcohol.	35	35	85	80		
Dulcamaræ	Dulcamaræ	60	50	.....	.....	A1. W1.	A1. W2.	40	35	80	80		
Ergotæ	Ergotæ	60	40	.....	.....	A3. W4.	A1. W1.	30	30	85	85	6 parts Dil. Hydrochlor. Acid	1 part Acetic Acid.
Erythroxyli	Cocæ	40	40	.....	.....	A1. W1.	A1. W1.	45	40	80	80		
Eucalypti	Eucalypti	40	40	.....	.....	Alcohol.	Alcohol.	35	35	85	85		
Eupatorii	Eupatorii	40	40	.....	.....	A1. W1.	A1. W2.	40	40	80	80		
Frangulæ	Frangulæ	40	40	.....	.....	A1. W2.	A1. W2.	35	40	80	80		
Gelsemii	Gelsemii	60	60	.....	.....	Alcohol.	A1. W1.	30	35	90	85		
Gentianæ	Gentianæ	30	40	.....	.....	A1. W1.	A1. W1.	35	40	80	80		
Geranii	Geranii	30	40	10	10	A1. W1.	A1. W1.	35	35	70	80		
Glycyrrhizæ	Glycyrrhizæ	40	40	.....	20	A1. W1.	A1. W3.	35	35	75	75	6 parts Water of Ammonia.	5 parts Water of Ammonia.
Gossypii Radicis	Gossypii Radicis	30	40	35	20	Alcohol.	Alcohol.	50	40	70	80		
Grindeliæ	Grindeliæ	30	40	.....	.....	A3 W1.	Alcohol.	30	30	85	85		
Guaranæ	Paullíniæ	60	60	.....	.....	A3. W1.	A2. W1.	20	30	80	85		
Hamamelidis		40	.....	.....	.....	A1. W2.	.....	35	.....	85	.....		
Hydrastis	Hydrastis	60	40	.....	.....	A3. W1.	A3. W1.	30	30	85	85		
Hyoscyami	Hyoscyami	60	40	.....	.....	A3. W1.	A3. W1.	40	40	90	80		
Ipecacuanhæ	Ipecacuanhæ	80	60	.....	.....	Alcohol.	A3. W1.	35	35	.....	85	Water and Alcohol.	

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		Com.	P.C.P.	Com.	P.C.P.	Com.	P.C.P.	Com.	P.C.P.	Com.	P.C.P.	Com.	P. C. P.
EXTRACT. FLUID.	EXTRACT. FLUID.												
Iridis		60	.....	.....	.....	A3. W1.	....	40	.....	90	.....		
Krameriæ	Krameriæ	30	60	20	20	A1. W1.	A1. W1.	40	35	70	75		
Lactucarii	....	Coarse pieces.	.....	....	.....	Ether & Water.	.....	100E.	.....	....	.....	Alcohol and Water.	
Leptandræ	Leptandræ	60	40	15	.....	A1. W1.	A2. W1.	40	35	80	80		
Lobeliæ	Lobeliæ	60	40	.....	.....	A1. W1.	A1. W1.	35	40	85	85		
Lupulini	Lupulinæ	.....	.....	.....	.....	Alcohol.	Alcohol.	20	Pack dry.	70	75		
Matico	Matico	40	50	10	10	A3. W1.	A3. W1.	30	35	85	85		
Mezerei	Mezerei	30	40	.....	.....	Alcohol.	Alcohol.	40	50	90	90		
Nucis Vomicæ	.....	60	.....	.....	.....	A8. W1.	.....	100	.....	90	.....		
Pareiræ	Pareiræ	40	50	20	20	A1. W1.	A1. W1.	40	35	85	80		
Pilocarpi	Pilocarpi	40	40	.....	.....	A1. W1.	A1. W2.	35	40	85	85		
Podophylli	Podophylli	60	40	.....	.....	A3. W1.	Alcohol.	30	30	85	85		
Pruni Virginianæ	Pruni Virginianæ	20	40	16·66	10	A1. W1.	A1. W6.	50W. & G.	50W.	80	80	33·33 parts Water.	50 parts Water. 20 parts Sugar.
Quassiæ		60	.....	.....	.....	A1. W1.	....	40	.....	90	.....		
Rhei	Rhei	30	40	.....	.....	A3. W1.	A3. W1.	40	40	75	75		
Rhois Glabræ	Rhus Glabri	40	40	10	20	A1. W1.	A1. W2.	35	30	80	75		
Rosæ	.....	30	.....	10	.....	A1. W1.	.....	40	.....	75	.....		
Rubi	Rubi	60	40	20	20	A9. W7.	A1. W1.	35	35	70	75		
Rumicis	Rumicis	40	40	.....	.....	A1. W1.	A1. W1.	35	35	80	80		
Sabinæ	Sabinæ	40	40	.....	.....	Alcohol.	Alcohol.	25	35	90	85		
Sanguinariæ	Sanguinariæ	60	40	.....	.....	Alcohol.	A2. W1.	30	35	85	85	.....	1 part Acetic Acid.
Sarsaparillæ Comp.	Sarsaparillæ Comp.	30	30	10	10	A1. W2.	A1. W2.	40	35	80	80		
Sarsaparillæ	Sarsaparillæ	30	30	10	10	A1. W2.	A1. W2.	40	35	80	80		
Scillæ	Scillæ	20	40	.....	.....	Alcohol.	Alcohol.	20	35	75	85		
Scutellariæ	Scutellariæ	40	40	.....	....	A1. W2.	A1. W1.	35	40	80	80		
Senegæ	Senegæ	40	40	.....	.....	A2. W1.	A1. W1.	45	35	85	80	2 parts Water of Ammonia.	2 parts Water of Ammonia.
Sennæ	Sennæ	30	40	.....	.....	A3. W4.	A1. W1.	40	35	80	80		
Serpentariæ	Serpentariæ	60	40	.....	.....	A3. W1.	A3. W1.	30	35	90	85		
Spigeliæ	Spigeliæ	60	40	.....	.....	A1. W1.	A1. W1.	30	30	85	80		
Stillingiæ	Stillingiæ	40	30	.....	.....	A1. W1.	A3. W1.	30	60	85	85		
Stramonii	.....	40	.....	.....	.....	A3. W1.	.....	20	.....	90	.....		
Taraxaci	Taraxaci	30	40	.....	10	A2. W3.	A2. W3.	30	35	85	80		
Tritici	Tritici	Finely cut.	20	.....	.....	Water...	Water...	.....	.....	.....	.....	20 parts Alcohol.	15 parts Alcohol.
Uvæ Ursi	Uvæ Ursi	30	30	10	20	A1. W1.	A1. W2.	35	35	70	75		
Valerianæ	Valerianæ	60	40	.....	... ...	A2. W1.	A2. W1.	30	30	85	80		
Veratri Viridis	Veratri Viridis	60	40	.....	.....	Alcohol.	Alcohol.	30	40	90	85		
Viburni	.....	60	.....	.....	.....	A2. W1.	.....	30	.....	85	.....		
Xanthoxyli	Xanthoxyli	40	40	.....	.....	Alcohol.	A2. W1.	25	35	90	85		
Zingiberis	Zingiberis	40	40	.....	.....	Alcohol.	Alcohol.	25	30	90	95		

The ten rejected were: Ext. Anthemidis fl., ext. Asari fl., ext. Aurantii Dulcis Corticis fl., ext. Erigerontis Canadensis fl., ext. Helianthemi fl., ext. Juniperi fl., ext. Lappæ fl., ext. Spigeliæ et Sennæ fl., ext. Sumbul fl., and ext. Thujæ fl.

The eleven added are: Ext. Aromaticum fl., ext. Capsici fl., ext. Cypripedii fl., ext. Hamamelidis fl., ext. Iridis fl., ext. Lactucarii fl., ext. Nucis Vomicæ fl., ext. Quassiæ fl., ext. Rosæ fl., ext. Stramonii fl., ext. Viburni fl.

It may be said of several of these eleven, that they are of no more value than some of the ten which were stricken off; it is particularly unfortunate that fluid extract of spigelia and senna was dropped from the list, as it is much used, and an excellent formula was given for its preparation; a satisfactory preparation cannot be made by mixing the respective fluid extracts, even if both have been prepared with the same strength of menstruum.

In the preparation of the fluid extracts, the mode of procedure recommended by the Philadelphia College of Pharmacy has been generally adopted, with some unimportant changes.

The method briefly is as follows: One hundred grammes of the powdered drug are moistened with a specified quantity of the menstruum, usually about thirty-five grammes, the moistened powder is then packed in a cylindrical percolator, and enough of the menstruum added to saturate it and leave a stratum above; when the percolate is about to drop, the lower orifice is closed, the percolator closely covered, and the contents allowed to macerate for forty-eight hours. The percolation is then allowed to proceed, gradually adding more menstruum, until the drug is exhausted. A specified quantity of the first percolate, usually about eighty cubic centimeters, is reserved, and the remainder evaporated to a soft extract; this is to be dissolved in the reserved portion, and enough of the original menstruum added to make the fluid extract measure one hundred cubic centimeters.

The direction to dissolve the soft extract in the reserved percolate is an important improvement, as it will in most cases be found to dissolve much more completely in this than it will in the menstruum with which the drug was exhausted.

The table furnishes the following information: As to fineness of powders, in twenty-four cases the Committee agrees with the Philadelphia College, in twenty-three cases finer powder is directed, and in nineteen cases coarser.

In regard to the use of glycerin, the Committee has directed it in seventeen cases, and the Philadelphia College recommended it in seventeen also, though not all the same ones; in eight cases the same quantity was recommended by both; in three cases the Committee ordered the larger, and in three the smaller quantity.

Alcoholic strength of menstruum: In thirty-eight cases the same strength is directed by both; in twenty-one cases the Committee directed a stronger, and in ten cases a weaker menstruum.

Quantity of menstruum to moisten the powder previous to packing: In twenty-seven cases both agree; in fifteen cases the Committee direct more, and in twenty-three less.

Reserved percolates: In twenty-nine cases both agree; in twenty-one cases the Committee reserves more, and in sixteen cases less than the Philadelphia College recommended.

Taking up the fluid extracts in their regular order, the first on the list is:

Extractum Aconiti Fluidum.—*Fluid Extract of Aconite.*—This appears now first under the name of fluid extract, but it differs from the liniment of aconite of the Pharmacopœia of 1870, only in the absence of one-eighth of its volume of glycerin; it is made from aconite root, which is now the only officinal part of the plant. The menstruum used is alcohol, the addition of one per cent. of tartaric acid seems to be unnecessary, as if good root be employed there can be no doubt of the sufficient activity of the product.

Extractum Arnicæ Radicis Fluidum.—*Fluid Extract of Arnica Root.*—This is also a new preparation, and one likely to prove useful; the menstruum directed is diluted alcohol, which is now conceded to best extract both arnica root and flowers. The necessity for the introduction of a tincture of arnica root, also, is not apparent; it might be supposed that the tincture of the flowers and the fluid extract of the root would sufficiently represent even so valuable an article as arnica.

Extractum Aromaticum Fluidum.—*Aromatic Fluid Extract*—This also makes its first appearance in the present Pharmacopœia; it was not on the list recommended by the Philadelphia College of Pharmacy, but is one of the eleven added by the Committee of Revision; it is made from the officinal aromatic powder with alcohol as the menstruum, and will no doubt retain its properties longer than the powder does, but the necessity for its introduction is not very apparent.

EXTRACTUM AURANTII AMARI FLUIDUM.—*Fluid Extract of Bitter Orange Peel.*—This is also a newly-introduced fluid extract; it was recommended by the Philadelphia College of Pharmacy, with alcohol of the specific gravity ·822 as the menstruum; the Committee of Revision have directed a menstruum composed of two parts of alcohol and one part of water, instead; without having had an opportunity of testing it, I am inclined to think favorably of the weaker menstruum. This fluid extract is to be made from the orange-peel in ribbons or quarters, with the epidermis of a dark brownish-green color, such as is known in commerce as Curacoa orange-peel; it yields a preparation very much superior to that made from the ordinary bitter orange-peel.

The Philadelphia College of Pharmacy also recommended a fluid extract of sweet orange-peel, made from the recently dried yellow portion of the peel of sweet oranges, using alcohol as the menstruum; the Committee of Revision, perhaps unwisely, rejected this and directed a tincture containing twenty parts of the peel in one hundred, also using alcohol as the menstruum.

EXTRACTUM BELLADONNÆ FLUIDUM.—*Fluid Extract of Belladonna.*—This was officinal in the Pharmacopœia of 1870, under the name of fluid extract of belladonna root, and was so recommended by the Philadelphia College for the present Pharmacopœia; as the belladonna leaves are still officinal, and the tincture and alcoholic extract are directed to be made from them, it would certainly have been more definite to have retained the former title. The menstruum directed in the Pharmacopœia of 1870, was alcohol s. g. ·835 twelve fluidounces, glycerin three fluidounces, water one fluidounce, finishing the percolation with diluted alcohol s. g. ·941. The menstruum directed in the present Pharmacopœia is alcohol, that recommended by the Philadelphia College of Pharmacy was alcohol three parts, water one part. Without doubting the superiority of the product of the officinal process, it may be stated that the opinion of several previous investigators has been in favor of a weaker menstruum.

EXTRACTUM BRAYERÆ FLUIDUM.—*Fluid Extract of Brayera.*—The desirability of a permanent liquid preparation of koosso has long been manifest. For this newly introduced fluid extract, alcohol is directed as the menstruum; various weaker alcohols were tried alone and with glycerin, but they all precipitated badly, even the sides of the bottles being covered with waxy resinous matter. The menstruum adopted furnishes a good preparation with comparatively a slight

deposit; this menstruum also appears to best dissolve the active principle of koosso.

EXTRACTUM BUCHU FLUIDUM.—*Fluid Extract of Buchu.*—The menstruum for this popular and efficient fluid extract has been very much changed from that directed in the Pharmacopœia of 1870, alcohol s. g. ·835 being then employed, and some prominent pharmacists recommending that of s. g. ·817 as being even better for its preparation. In the present Pharmacopœia, a menstruum composed of alcohol two parts and water one part, is directed to be used. This menstruum furnishes a fluid extract very much superior to that made with alcohol alone. That it completely exhausts the buchu was proved by the following experiment: After making the fluid extract the residue was dried, and then it retained only the slightest odor of buchu; it was then percolated with alcohol s. g. ·822, yielding a light green percolate without perceptible taste or odor of buchu; this percolate when evaporated left a very small quantity of tasteless, brownish-green extract.

A sample of fluid extract made from the long leaf, had the specific gravity of ·988, one from the short leaf ·997, and from equal parts of the long and short leaf ·994. These samples three years after being made are still almost free of precipitate, and otherwise in good condition.

EXTRACTUM CALAMI FLUIDUM.—*Fluid Extract of Calamus.*—In this newly-introduced preparation, alcohol is employed as the menstruum. The well known properties of calamus are here presented in a concentrated, elegant, and permanent form, which should induce its employment in place of other more expensive aromatics of foreign origin.

EXTRACTUM CALUMBÆ FLUIDUM.—*Fluid Extract of Calumba.*—The menstruum directed for this preparation in the Pharmacopœia of 1870, was alcohol fourteen fluidounces, and glycerin two fluidounces, finishing the percolation with a mixture of two volumes of alcohol and one volume of water. The present Pharmacopœia directs diluted alcohol to be employed; the Philadelphia College of Pharmacy recommended two parts of alcohol and one part of water as the menstruum which possesses the advantage of percolating freely and of yielding a fluid extract from which only a slight precipitate separates. As the Committee of Revision have directed three parts of alcohol and two parts of water as the menstruum for the tincture of calumba, it is diffi-

cult to understand why a weaker menstruum should be employed for the fluid extract.

EXTRACTUM CANNABIS INDICÆ FLUIDUM.—*Fluid Extract of Indian Cannabis.*—This is first made officinal in the present Pharmacopœia, the menstruum directed is alcohol. There is also an officinal tincture of Indian cannabis, not made as formerly from the extract, but from the herb. It does seem that this drug would be sufficiently represented in the liquid form by the fluid extract.

EXTRACTUM CAPSICI FLUIDUM.—*Fluid Extract of Capsicum.*—This is also a new preparation. With the oleoresin and tincture already officinal, the need for a fluid extract of capsicum seems extremely limited. This preparation was not recommended by the Philadelphia College of Pharmacy, but is one of the eleven introduced by the Committee of Revision; the menstruum directed for its preparation is alcohol, which will no doubt furnish a product fully representing the drug, and possessing much warmth of character.

EXTRACTUM CASTANEÆ FLUIDUM.—*Fluid Extract of Castanea.*—This is also one of the newly-introduced fluid extracts; in the preparation of this fluid extract the Committee of Revision direct five hundred cubic centimeters of boiling water to be added to one hundred grammes of chestnut leaves, in number thirty powder; after two hours maceration the liquid is to be expressed, the residue transferred to a percolator, and water added until the powder is exhausted. The united liquids are to be evaporated to two hundred cubic centimeters, and after cooling, sixty cubic centimeters of alcohol are added; after the insoluble matter has subsided, the clear portion is to be decanted and the remainder filtered, the united liquids are to be evaporated to eighty cubic centimeters, allowed to cool, and then enough alcohol is added to make the fluid extract measure one hundred cubic centimeters. The formula recommended by the Philadelphia College of Pharmacy avoids the treatment with hot water, the repeated evaporations of the entire quantity and also the total loss of sixty per cent. of alcohol involved in the officinal formula. The menstruum recommended in this formula was composed of alcohol one part, and water two parts; to eighty parts of this mixture twenty parts of glycerin were added, and after this was used, the percolation was finished with the alcohol and water, the first seventy-five parts of percolate being reserved and the remainder evaporated to a soft extract, dissolved in the reserved

portion, and the quantity made up to one hundred parts with some of the menstruum.

This formula has been made up a number of times without any special difficulty, the product being an elegant fluid extract, depositing only a slight precipitate, and no doubt possessing whatever medicinal properties the chestnut leaves may contain.

EXTRACTUM CHIMAPHILÆ FLUIDUM—*Fluid Extract of Chimaphila.*—This is one of the preparations of the Pharmacopœia of 1870, the menstruum there directed being alcohol eight fluid ounces, glycerin three fluidounces, and water five fluidounces, finishing the percolation with diluted alcohol. In the present Pharmacopœia, diluted alcohol is directed, with ten per cent. of glycerin in the first one hundred parts of menstruum; the Philadelphia College of Pharmacy recommended one part of alcohol and two parts of water for the menstruum, with twenty per cent. of glycerin in the first one hundred parts. This weaker menstruum thoroughly exhausts the pipsissewa, but when kept long a considerable precipitate is formed, therefore the officinal menstruum is probably the best, ten per cent. of glycerin would also seem to be sufficient for this fluid extract.

EXTRACTUM CHIRATÆ FLUIDUM.—*Fluid Extract of Chirata.*—This is one of the newly-introduced fluid extracts, and one that surely there was no pressing demand for; chirata had its day, years ago, and is not likely to gain even a temporary revival in the near future. The menstruum directed for the preparation of the fluid extract is diluted alcohol with ten per cent. of glycerin in the first one hundred parts, the Philadelphia College of Pharmacy recommended one part of alcohol and two parts of water, as the menstruum without glycerin; the fluid extract prepared after this formula precipitated considerably, but not as much as some samples prepared with more alcoholic menstruums; the glycerin in the officinal formula will probably prevent precipitation to some extent.

EXTRACTUM CIMICIFUGÆ FLUIDUM.—*Fluid Extract of Cimicifuga.*—The Pharmacopœia of 1870, the present Pharmacopœia, and the Philadelphia College of Pharmacy, all recommend alcohol of ·817 to ·822 specific gravity, as the menstruum for this preparation; this unanimity of opinion is fully warranted by the product; a sample of the fluid extract prepared over three years ago is quite free of sediment, and as bright and clear as when first made.

EXTRACTUM CINCHONÆ FLUIDUM.—*Fluid Extract of Cinchona.*—For this preparation the Pharmacopœia of 1870 directed as the menstruum, alcohol eight fluidounces, glycerin three fluidounces, and water five fluid ounces, finishing the percolation with diluted alcohol. The present Pharmacopœia directs the use of twenty-five parts of glycerin and seventy-five parts of alcohol, and then finishes the percolation with a sufficient quantity of a mixture of three parts of alcohol and one part of water. The Philadelphia College of Pharmacy recommended a menstruum composed of three parts of alcohol and one part of water, with twenty per cent. of glycerin in the first one hundred parts. This furnishes a fluid extract which has kept several years with only a very slight precipitation, the officinal menstruum is so nearly identical that its product would, no doubt, keep as well.

EXTRACTUM COLCHICI RADICIS FLUIDUM.—*Fluid Extract of Colchicum Root.*—As the menstruum for this preparation, the Pharmacopœia of 1870, directed alcohol twelve fluidounces, glycerin three fluidounces, and water one fluidounce, finishing the percolation with diluted alcohol. The present Pharmacopœia directs two parts of alcohol and one part of water, the Philadelphia College of Pharmacy recommended diluted alcohol. A sample of the fluid extract prepared over three years ago with diluted alcohol, is at the present time of a deep red color, perfectly transparent, and contains only the slight deposit that was formed soon after it was made. There seems to be no necessity for the use of the stronger officinal menstruum.

EXTRACTUM COLCHICI SEMINIS FLUIDUM.—*Fluid Extract of Colchicum Seed.*—The menstruum directed for this preparation in the Pharmacopœia of 1870, was alcohol twelve fluidounces, glycerin three fluidounces, and water one fluidounce, finishing the percolation with diluted alcohol. The present Pharmacopœia directs two parts of alcohol and one part of water; the Philadelphia College of Pharmacy recommended the same strength. A sample of fluid extract prepared with this menstruum over three years ago remains perfectly clear and entirely without deposit, a very few small globules, probably of oil, are noticed on the top, this would most likely be prevented by the use of diluted alcohol as the menstruum, and this, according to careful experiments reported in the AMER. JOUR. PHARMACY, Jan., 1881, p. 6, is strong enough for the extraction of the whole of the alkaloid.

EXTRACTUM CONII FLUIDUM.—*Fluid Extract of Conium.*—For this fluid extract the Pharmacopœia of 1870 directed the following men-

struum: Alcohol eight fluidounces, glycerin three fluidounces, and water five fluidounces, finishing the percolation with diluted alcohol, and adding to the dilute percolate previous to evaporation, one fluidounce of glycerin and one hundred and eighty grains of muriatic acid. The present Pharmacopœia directs diluted alcohol to be used as the menstruum, and adds three per cent. of diluted hydrochloric acid to the weak percolate previous to evaporating it. The Philadelphia College of Pharmacy also recommended diluted alcohol as the menstruum, and one per cent. of hydrochloric acid. A specimen of the fluid extract made over three years is not now quite clear, but has only slightly precipitated.

EXTRACTUM CORNUS FLUIDUM.—*Fluid Extract of Cornus.*—Owing to the dropping from the Pharmacopœia of two other species of cornus and of conium leaves, the names of this and the preceeding fluid extract have been shortened. The menstruum for this preparation, directed by the Pharmacopœia of 1870, was alcohol eight fluidounces, glycerin three fluidounces, and water five fluidounces, finishing the percolation with diluted alcohol. The present Pharmacopœia directs diluted alcohol with twenty per cent. of glycerin in the first one hundred parts of menstruum. This is as recommended by the Philadelphia College of Pharmacy, and the resulting fluid extract keeps remarkably well, with only a slight precipitate, such as is formed in most fluid extracts soon after they are made.

EXTRACTUM CUBEBÆ FLUIDUM.—*Fluid Extract of Cubeb.*—There appears to be no difference of opinion in regard to the proper menstruum for this preparation, the stronger alcohol directed by the former and the alcohol of the present Pharmacopœia, being almost identical in strength. This fluid extract will keep indefinitely, and as it is not unpleasant to the taste, it is surprising that it is not more used in place of powdered fruit.

Tinctura Anticholerica Bastleri.—Most of the published formulas for this preparation yield a turbid mixture, which on standing separates into two layers. The following formula, furnished by Labler, yields an unexceptionable preparation: Digest for three days cinnamon 5 parts in strong alcohol 25 parts; express, and to 24 parts of the tincture obtained add volatile oils of anise, cajuput, and juniper berries, each 4 parts, spirit of ether 12 parts, and Haller's acid elixir 1 part; finally filter.—*Rundschau*, 1882, p. 675; from *Casopis ceského lékárnictva.*

DEODORIZED TINCTURE OF OPIUM.

By R. Rother.

The excrementary and redundant products of vital action are frequently seized upon by selection, when subserving some extraneous purpose, and being raised from secondary to primary importance thus become the chief effects of biological development in its highest phases. The great diversity, extent and extreme development of the phanerogamic flora is principally due to the fact that the product of certain functions furnished food and shelter to various insects, birds, and other animals; and it is also the outcome of parasitism in the vegetal series itself. In the general decomposition and combination of substances, liberating force for the sustentation of vital activity, surrounding conditions will determine the tendency in the direction and amounts of the various resulting products. Therefore, that function or that organism will survive and become established and augmented in whose favor the prevailing tendency is directed. If the secretion of some function finds relish with some other organ or organism, this function will eventually increase to predominant importance. Secondary functions in harmony with the principal one, will correspondingly thrive and hence become concomitant.

When the flower of a plant yields a palatable juice to some insect its chances of survival through fertilization are increased, and should it also possess a pleasing fragrance, another factor of survival is added; should it further have a contrasting color, and bear in addition a savory and tinted fruit, its fitness to endure will intensify to the utmost.

In addition to these positive factors of survival, now come those of a negative, but no less important character. A plant otherwise favorably conditioned, and possessed of some ungrateful flavor, odor, and inconspicuous appearance, but especially qualified for resistance by some inherent noxious principle, will be doubly fortified for continuous existence. Most medicinal plants belong to this latter category. The chief physiologically potent constituent will represent the plant's medicinal value. But in addition to this principal one, there may be present various others of less and less efficiency. The plant usually further contains indefinite matters of decidedly disturbing natures. The characters and relative abundance of these sundry agencies is also dependent upon the stages during which the raw material is gathered or consumed. The most important active

ingredients contained within a plant are frequently, if not generally, chemically allied, and are either derivatives of one another or of some common source. The odorous constituents, although generally characterized by extreme potency, become most usually dissipated by reason of their volatility, or if not evaporated, are changed by oxidation into less fugitive, less odorous, and also less active resinous bodies. Therefore, many plants when used in the fresh condition have different degrees of activity and quality than when consumed in a dried or in a prepared state. Modern pharmacy has isolated many of these special agents, and in some instances modified or attempted to modify the raw material in such a manner as to cancel or wholly abolish certain objectionable features.

It was found that opium contained a perturbing body, at one time supposed to be alkaloidal, but now presumed to be of a resinous nature. In order to avoid this substance in certain of its preparations, opium or its aqueous extraction was treated with ether, having in view the removal of this noxious impediment. Such a preparation is the so-called deodorised tincture of opium. The fact has been, however, ascertained that aqueous treatment alone, by excluding the resinous matter, yields a deodorised and otherwise analogous product, showing that the washing of the watery extract with ether is superfluous and wasteful. In order to prevent the possible solution of the resinous matter during the extraction of the opium and incidentally avoid the unnecessary etherial treatment, but especially circumvent the decidedly objectionable and untimely application of heat needed in the extensive evaporation, the writer changed the operation accordingly. Most volatile oils, resins and semi-resins are soluble in fixed oily menstrua, aside from their various special solvents. Hence, the writer concluded that should there be a tendency in any of the opium resins or odorous principles to pass into aqueous solution, the presence of a fixed oily substance would be likely to prevent it. Vaselin was added to the heated mixture of opium and water, but since the vaselin did not promptly solidify in the cooling mixture, spermaceti was further incorporated with desirable effect. So thorough was the extraction of the activity and exclusion of the malodorous matter, and so admirably were the dregs gathered up by the solidifying fat, that the solution permitted of ready removal by simple decantation. The mixed decantates filtered clear and rapidly, and as no evaporation was necessary the tincture could be completed at once by the admixture of the requisite

measure of alcohol. This magnificent result, in connection with the speed and facility of the operation and comparative cheapness of the product, encourages the suggestion to abandon the ordinary tincture of opium altogether. Should it be advisable to retain the narcotine remaining in the dregs, a small proportion of dilute sulphuric acid might be used to secure it in the tincture as soluble narcotium sulphate. From these results the following formula for a deodorised tincture of opium is deduced:

Take of

Opium dried and powdered,	2½ troy ounces
Vaselin, Spermaceti } of each,	1 troyounce
Alcohol,	7 fluidounces
Water sufficient.	

Upon the opium contained in a suitable capsule pour 12 to 14 fluidounces of water and boil the mixture 10 to 15 minutes; then add the spermaceti and vaselin, stir them well together, let the mixture cool, and decant the liquid from the dregs. Upon the residue pour 8 fluidounces of water, again heat the mixture, stir it well, and after cooling, decant as before. Repeat this operation once more with 8 fluidounces of water or sufficient to make the mixed decantates measure 25 fluidounces. Mix the three decantates, let the mixture become cold, filter, and finally add the alcohol.

PRESCRIPTION SCALES AND WEIGHTS.

By William B. Thompson.

Read at the Pharmaceutical Meeting, January 16.

A paper with the above title, in part, read at a meeting of the Wisconsin Pharmaceutical Association, recalls to mind a similar production presented to the Pennsylvania Association, in which latter some interesting observations were elicited, detailing facts not at all creditable to the proverbial carefulness and pains-taking of the apothecary. It was demonstrated by actual visits of observation to various stores, that whilst the counter scales were faultlessly bright in the lustre of their mountings, the prescription scales in the screened recesses of the same establishments were not only lamentably lustreless, but criminally neglected in their conditions of accuracy and correctness. Just how naturally resultant errors and inaccuracies can escape observation and

detection is not easily understood—but that such must occur, and that frequently, cannot be controverted. It was the exception to find weights of less denomination than two grains—and from this standard up to scruples and drachms, the accretions of dirt and accumulated corrosion rendered their denomination almost illegible. It will occur to the minds of the reflecting, that if there be no other incentive to remedy such an existing state of things, pride should at least prompt to a proper appreciation of the importance to every pharmacist of being provided with an accurately adjusted balance for prescription-weighing, not such as are needed in analytical investigations, but a good, practically constructed balance, capable of weighing with accuracy one grain.

The fractions of this unit can easily be made by mechanical sub-division in the usual way—by placing the weighed portion upon a piece of glazed paper and dividing with the edge of a small spatula—practice will quickly make perfect in this, and the apothecary with the exercise of no more than ordinary care, need have no fear of error. The inaccuracy of the prescription scale is mainly due to neglect and careless misuse. The instruments are, doubtless, all good enough at the start, and should receive the same scrupulous attention as the vest-pocket chronometer. The prescription scale being viewed and made as a delicate piece of mechanism, should not be misused, and a good rule is not to subject it to heavier weighing than say twenty grains—this saves it from incessant use—for all other purposes between this weight and that of a half-ounce, the ordinary hand scale of English or German manufacture, with pans suspended by silken cords, is most convenient and best adapted. With the beam support taken between the thumb and forefinger of the left hand, and the scale raised almost to a level with the eye, the spatula or spoon in the right hand, dexterous, skillful and accurate weighing can readily be done. Such scales are usually furnished in a neat box, which affords a permanent receptacle, and by being placed upon the shelf or counter, are at all times readily accessible. In the use of these some practice becomes necessary, but the requisite dexterity is easily acquired, and once adopted few will be willing to dispense with their use. Experience has demonstrated that the best form of scale for prescription purposes is the even beam balance, the sensitive point of contact or friction being the one knife edge. By looking carefully after the cup-shaped indenture on which this impinges, such scales will last the apothecary's natural life time and never cause him reproach. As it is the pride of the perfect house-

wife to show her visitor the ordinary inaccessible parts of her house, as indicating the same care and attention as she bestows upon her parlor and library, so the scrupulous apothecary should not fear at all times to open to the gaze of the physician and patron the recesses of his establishment, that they may be assured that professional pride means something more than the mere superficial ornamentation and nicety of the external parts of his pharmaceutical domicile.

GALENICAL PREPARATIONS OF THE GERMAN PHARMACOPŒIA.

(Continued from page 8.)

Emulsiones seminales, if not otherwise directed, are prepared by triturating one part of the seed with sufficient water to obtain 10 parts of emulsion.

Emulsiones oleosæ are prepared after the following formula: Oil of almond, expressed, 2 parts, powdered gum arabic 1 part, water 17 parts.

Extracta.—Three degrees of consistence are recognized: 1, soft (*tenue*), of the consistence of fresh honey; 2, thick (*spissum*), which when cool, do not flow; 3 dry (*siccum*), which may be powdered.

Extracta narcotica sicca.—Thick extract 4 parts, and finely powdered liquorice root 3 parts, are mixed in a porcelain dish heated to between 40° and 50° C. (104° and 122° F.) until the mixture ceases to lose weight, when it is rubbed up with sufficient powdered liquorice root so as to obtain double the weight of the extract used.

Solutiones extractorum narcoticorum, for convenience in dispensing, are prepared of extract 10 parts, water 6 parts, alcohol 1 part, and glycerin 3 parts.

Extractum Absinthii.—Wormwood is exhausted by maceration with a mixture of 2 parts of alcohol and 3 of water, and the tincture evaporated to a thick extract, which is of a green brown color, and yields with water a turbid solution.

Extractum Calami, prepared like the preceding, is red brown.

Extractum Cardui benedicti is prepared by digesting blessed thistle herb, using boiling water, and evaporating to a thick extract. It is brown and yields a turbid solution with water.

Extractum Cascarillæ is made like the preceding, except that a small quantity of alcohol is added to the decanted infusion, previous to evaporation. The extract is dark brown.

Extractum Ferri Pomatum.—The expressed juice of 50 parts of sour apples is digested with powdered iron 1 part, in a water bath until gas ceases to be evolved, sufficient water is added to obtain 50 parts of liquid, which is set aside for several days, then filtered and evaporated to a thick extract; this is green-black, and yields with water a clear solution.

Extractum Graminis.—The rhizome of couch-grass is digested with boiling water, the liquid boiled to one-third, filtered, and evaporated to a thick extract, which is red brown, and dissolves clear in water.

Extractum Helenii is made of elecampane root like extract of absinth. It is brown and gives a turbid solution with water.

Extractum Rhei compositum.—Mix extract of rhubarb 30 parts, extract of aloes 10 parts, resin of jalap 5 parts, and medicated soap (made from olive oil and soda) 20 parts, keeping the ingredients moist by the addition of diluted alcohol (sp. gr. 0·894), and by means of a steam bath evaporate to dryness. It is blackish-brown, and yields with water a turbid solution.

Extractum Sabinæ is made of savine, like extract of absinth. It is green-brown, and but slightly soluble in water.

Extractum Scillæ, made from squill with diluted alcohol (sp. gr. 0·894), is a yellowish-brown thick extract, dissolving almost clear in water.

Extractum Trifolii fibrini is made of buck bean leaves like extract of carduus benedictus; it is black-brown, and dissolves clear in water.

Gelatina Carrageen.—Digest for half an hour in a steam bath: Irish moss 1 part, in water, 40 parts, strain, express lightly, add sugar 2 parts, and evaporate, removing the scum, to 10 parts

Gelatina Lichenis Islandici is made in the same manner, using Iceland moss 3 parts, water 100 parts, and sugar 3 parts; result 10 parts. These jellies are to be made fresh when prescribed.

Linimentum Ammoniato-camphoratum.—Camphorated oil 3 parts, poppy seed oil and ammonia water, each 1 part. Mix.

Oleum Camphoratum.—Dissolve camphor 1 part, in olive oil 9 parts.

Linimentum Saponato-camphoratum.—Dissolve, with the aid of a moderate heat, medicated soap 60 parts, and camphor 20 parts, in alcohol 810 parts, and glycerin 50 parts; filter the warm solution, using a covered funnel, add oil of thyme 4 parts, oil of rosemary 6 parts, and ammonia water 50 parts, and cool rapidly. It is nearly colorless, somewhat opalescent and liquefies readily by the heat of the hand.

Liquor Aluminii acetici.—Dissolve aluminium sulphate 300 parts, in water 800 parts, add acetic acid (sp. gr. 1·041) 360 parts, and afterwards, in small quantities and with continual agitation, precipitated calcium carbonate 130 parts, previously rubbed up with water 200 parts; set aside for 24 hours at the ordinary temperature, agitating frequently, strain, express the precipitate without washing, and filter. It is a clear, colorless liquid, of the specific gravity 1·044 to 1·046, having a slight acetic odor, an acid reaction and a sweetish astringent taste.

Liquor corrosivus is prepared only when needed for dispensing by dissolving sulphate of copper and sulphate of zinc, each 6 parts, in vinegar (containing 6 per cent. of acetic acid) 70 parts, and adding solution of subacetate of lead (sp. gr. 1·237) 12 parts.

Liquor Kali acetici.—Acetic acid (sp. gr. 1·041) 100 parts, bicarbonate of potassium 48 parts; mix, apply heat, neutralize with potassium bicarbonate, and dilute so as to obtain 147 parts of solution. It has the specific gravity 1·176 to 1·180, and three parts of it contain one part of potassium acetate.

Liquor Kali Carbonici.—Dissolve potassium carbonate 11 parts, in water 20 parts, filter and add sufficient water to make the specific gravity 1·330 to 1·334. Three parts of the solution contain one part of potassium carbonate.

Mixtura Oleoso-balsamica.—Mix volatile oils of lavender, cloves, cinnamon, thyme, lemon, mace, and orange flowers, of each 1 part, balsam of Peru 3 parts, with alcohol (sp. gr. 0·832) 240 parts; set aside for several days in a cool place, agitating frequently, then filter. It is clear and of a brownish-yellow color.

Mixtura Sulfurica Acida.—Add cautiously, and with agitation, sulphuric acid 5 parts, to alcohol 15 parts, so that the temperature shall not rise above 50° C. (122° F.). It is colorless and has the sp. gr. 0·993 to 0·997.

A New Moxa.—Under the name of *crayon feu*, Dr. Moses describes a preparation made as follows: Charcoal powder 30 grams; potassium nitrate 4 grams, powdered iron 5 grams, benzoin 1 gram; the whole to be made up with some active substance into forty crayons. He so obtains a hard preparation, which is easily inflamed by a match, and which he proposes for the cauterization of poisoned wounds and when the actual cautery is required.—*Medical News*, 1883, p. 40. *Gaz. Hebdomadaire*, Dec. 1. 1882.

SYRUP OF SQUILL AND SYRUP OF IPECAC, SIMPLE AND COMPOUND.

By R. Rother.

It is almost a truism that, where there is a ceaseless effort to improve some process, there must abide a radical and obnoxious defect. Now, if the obstacle is radical in its nature, the aberrant cause becomes the dominant feature in the process, and remains a rich source of empirical methods, until its principle is understood. For a long time fermenting syrups were a standing menace to elegant pharmacy. Not until alcohol in sufficient proportion was applied did the agitation in this regard end. For an equally extended period the pectose derivatives roiled tinctures and syrups, until alkalies were employed to suppress the odious jellies. Many resins, which long were troublesome, likewise yielded to the solvent action of alkalies, especially in the presence of sugar. An extensive array of tinctures presented various defects in the way of turbidity, deficient strength, and retarded percolation and filtration, owing to the use of too weak alcohol in their preparation. An increased strength of the alcoholic menstrua swept away this multitude of grievous objections. Saline menstrua now serving excellent special purposes will eventually become more generally important. Acidulated menstrua have many particular uses, but some mischief and positive inconvenience has resulted from their too general employment, where their aid was by no means indicated. Syrup of squill is an example of such cases. Vinegars and wines are probably relics of primitive pharmacy. The fermented liquors earliest in use were so deficient in alcohol that acetic acid was speedily developed by secondary fermentation. The resulting vinegar being found possessed of antiseptic qualities, naturally met with frequent application for this purpose. Hence, medicines as well as perishable articles of food were prepared with this acidulated solvent and preservative. Wines, perhaps, came later into use when improved methods produced them of greater alcoholic strength. When, however, distillation yielded still stronger alcohol, its use became general, and vinegars and wines dwindled to lingering rudiments in the modern organism of pharmacy. Syrups were originally made from medicated vinegars, and syrup of squill is prepared in that manner to this day. But an acidulated preparation of squill is contra-indicated in all its therapeutical applications. Squill is almost invariably given in connection with alkaline, saline or neutral

mixtures. In pharmacy, also, a great disadvantage results when such mixtures are compounded, owing to the fact that physicians forget the acid nature of syrup of squill. This syrup is not only medicinally and chemically incompatible with alkalies and carbonates, but also mechanically with the latter by reason of the persistent frothy effervescence set up in a syrupy liquid. Furthermore, when a fresh vinegar of squill is converted into syrup, the yet unchanged pectose derivative becomes insoluble as a bulky gelatinous precipitate.

The activity of squill is readily extracted by water, but a mixture of the drug and water gets rapidly putrid; if, however, an aqueous menstruum, containing one-eighth its volume of alcohol is used, putrefaction and fermentation are prevented. Such an extraction yields no precipitate with sugar, and produces an elegant syrup, readily miscible with alkalies and acids without change. When the filtered macerate is treated with ammonia, a considerable greenish precipitate is formed, which rapidly subsides and again quickly dissolves on the addition of sugar, but is wholly prevented when the order of mixture is reversed. Pharmacists will find a neutral syrup of squill very convenient in all such cases where the ordinary syrup is incompatible

In the preparation of this syrup as well as of others, and also many tinctures, the method of remaceration proposed by the writer is far preferable to percolation and often more exact. Most crude drugs, such as roots, barks, and leaves, have a pretty definite normal of absorption, that is capacity for imbibing and holding menstrua. When this has been determined, a simple mathematical calculation will show how much loss is sustained, after obtaining a certain measure of decanted liquid. The normal of absorption of squill with one-eighth alcohol, is rather high, but since the drug is cheap, a loss of 20 per cent. is immaterial, when there is more than a corresponding gain in definiteness and quality of the product and facility in the process.

The application of heat in the preparation of syrups is chiefly objectionable on account of the large volume of liquid to be heated, and the difficulty of straining it whilst hot. To obviate all this, percolation was suggested. But this presents so many objections, that its few advantages were small by comparison. The cold process, by simple mixture and agitation, is so vastly superior to all others that it is fast coming into general favor. In cases of very dense syrups and such containing much alcohol, some difficulty is found in dissolving the last portions of the sugar. In preparing simple syrup such a residue is not objec-

tionable, but in all other cases complete solution is imperative. To this end the writer divided the menstruum and used portions successively on the saccharine residue. However, an equally effective, but more facile method consists in mixing the whole, then stirring until most of the sugar has dissolved, decanting the syrup, heating the remainder until dissolved, uniting the whole, and straining. One gallon of neutral syrup of squill is prepared as follows:

Take of

Squill, whole,	10 troyounces.
Sugar, granulated,	96 " "
Alcohol, Water, }	of each sufficient.

Mix alcohol and water in the proportion of one measure of the first and seven measures of the second and pour 57 fluid ounces of the mixture upon the squill contained in a wide-mouthed bottle. Macerate this mixture for three or four days, with occasional shaking, and decant 32 fluidounces of the liquid. Upon the residue pour 32 fluidounces of the menstruum, and after 3 or 4 days decant as before. Mix the two decantates, filter and pour the filtrate on the sugar contained in an appropriate vessel; stir the mixture until most of the sugar is dissolved, decant about six pints of the syrup, heat the residue until dissolved, then mix the whole and strain.

Syrup of ipecac is another one of those protean compounds whose radical fault not being understood has caused it to pass through a great variety of changes. In this case the presence of a small amount of pectosic matter is, however, only part of the difficulty. The main cause of aberration resides in the large amount of resin that is contained in the root. In some of the former processes for this syrup it was assumed, on the statement that emetine, the active principle, being insoluble in water, that acetic acid must be used to render this soluble. But acetic acid brought no advantages for preventing a cloudiness which invariably appeared in the syrup. The resin was excluded in subsequent methods by mixing a fluid extract or a condensed alcoholic extraction with water, filtering and then adding the sugar; but the cloudiness still appeared although less obtrusively. The great and particular defect in this method was the fact that the acid resin carried with it a considerable portion of the activity. Later the writer extracted the root with acidulated water containing only enough alcohol to prevent fermentation. Under these conditions the gelatinous cloud was yet manifest, but subsiding rapidly left the supernatant syrup clear

and bright. Deeming the jelly to be of pectosic origin and finding that a fluid extract of ipecac when mixed with ammonia remained clear the writer then employed an ammoniacal menstruum and found that both emetine and resin were readily and completely exhausted. The resulting deep brown solution produced a magnificent dark brown, clear, and permanent syrup on the addition of sugar.

The resin of ipecac is distinct from ipecacuic acid. The resin is insoluble in water but extremely soluble in alkalies, especially ammonia. The thorough exhaustion of the root by means of an ammoniacal menstruum lends the appearance that if the acid resin formed native insoluble compounds with emetine these were dissolved by the ammonia. But this assumption is superfluous, since the statement of the investigators of emetine in regard to its insolubility in water is incorrect. Although emetine is precipitated from moderately concentrated solutions of its salts by ammonia and unaffected by an excess of the latter, it is yet quite freely and amply soluble in the large volume of water used in its extraction from the root. The writer found that when the ammoniacal extraction is evaporated to a syrupy liquid, again alkalinified with ammonia and shaken with a mixture of equal volumes of ether and acetic ether, a yellowish ethereal solution of emetine is obtained. This solution, on spontaneous evaporation left a yellowish crystalline residue of emetine. This when treated with water is converted into a cream-colored amorphous emetium hydrate. The crystals as well as the hydrate are promptly and perfectly soluble in acids from which ammonia precipitates bulky flakes of the hydrate in not too dilute solutions. Emetine is further remarkable in being much more bitter than its salts. Acetic ether is the great solvent of emetine, but owing to the ready miscibility of ethyl acetate with watery liquids, ordinary ether is advantageously added in the extraction from the crude residue. Emetine, although insoluble in ethyl oxide, is yet soluble in a mixture of the two ethers.

The writer has invented the new terms emetium salts, as for instance emetium hydrate, emetium acetate, etc., as being in consonance with ammonium salts or rather with modern chemistry in general. All natural alkaloids being tertiary monamines are hence the atomic equivalents of ammonia gas or NH_3. All ammonium salts are coalescences of NH_3 with entire acid molecules and all alkaloidal salts are strictly analogous.

For instance, ammonium acetate is $NH_4+HAc=NH_4Ac$, or abbrevi-

ating NH_3 as Am it is AmHAc, that is the basic radicle NH_4 or AmH united with the acid radicle Ac. Representing emetine by Em we have for emetium acetate Em+HAc or EmHAc and emetium hydrate $Em+OH_2=EmH(OH)$. Writing quinine, quinidine and cinchonine Qn, Qd and Cn we have for the chlorides QnHCl, etc., for the sulphates $(QnH)_2 SO_4$, etc., and for the phosphates $(QnH)_2 HPO_4$, etc.

Returning now to syrup of ipecac, we have the formula for 4 pints, as follows:

Take of

Ipecac, coarsely bruised,	4½ troy ounces.
Sugar, granulated,	48 " "
Calcium carbonate,	½ " ounce.
Ammonia water,	¼ fluid "
Alcohol, Water, of each sufficient.	

Mix alcohol and water in the proportion of one volume of the first and seven of the second, and pour 25 fluid ounces of the mixture together with the ammonia water upon the ipecac contained in a wide-mouthed bottle. Macerate the mixture for 3 or 4 days, shaking it up occasionally; then decant 16 fluid ounces of the liquid. On the residue pour 16 fluid ounces of the menstruum, and after 3 or 4 days' maceration decant 16 fluid ounces as before. Mix the two decantates, add the calcium carbonate, agitate and filter. Pour the filtrate on the sugar contained in a proper vessel, stir until most of the sugar has dissolved and decant about 3 pints of the syrup. Heat the remainder until solution is affected, then mix the whole and strain.

The compound syrup of ipecac, or substitute for Dover's powder, is extensively in use. But it is not properly prepared, being fermentable and otherwise unsatisfactory. A permanent and elegant syrup containing ½ a grain each of opium and ipecac in the fluidram is prepared by the following ready formula:

Take of

Deodorised tincture opium,	8 fluidrams.
Syrup of ipecac,	10 "
Simple syrup, sufficient to make	75 "

Mix.

Cold Cream easily becomes rancid. The addition of salicylic acid has been found an excellent preventive against this tendency, which usefulness is enhanced by its healing qualities.

COMPARATIVE VALUE OF BENZOIN AND STYRAX IN THE PRESERVATION OF OINTMENTS.

By Benjamin Franklin Scholl, Ph.G.

(From an Inaugural Essay.)

A tincture of storax was prepared of the same strength as tinctiura benzoini, U. S. Pharmacopœia, 1870 (three troyounces to one pint of alcohol). This and tincture of benzoin was used in a series of experiments commenced April 3, 1881. Pure fresh lard was obtained and the following mixtures made, following the pharmacopœia process:

1.	Lard,	℥j	Tincture of styrax, ʒj
2.	Lard,	℥j	Tincture of styrax, ʒss
3.	Lard,	℥j	Tincture of styrax, ♏xv
4.	Simple cerate,	℥j	Tincture of styrax, ʒj
5.	Simple cerate,	℥j	Tincture of styrax, ʒss
6.	Lard,	℥j	Tincture of benzoin, ʒj
7.	Lard,	℥j	Tincture of benzoin, ʒss

The specimens were put in wide-mouthed bottles, loosely covered with paper so as to admit the air, but exclude the dust, and were then placed on a shelf in the store, where they were exposed to the light and heat during the warm summer months. On examining them from time to time Nos. 2 and 3 were found rancid and unfit for use, August 30th, while all the rest were still in good condition.

October 20th, a perceptible change was noticed in Nos. 1 and 5, and a short time afterwards they were found to have become rancid One month later No. 7 began to show signs of becoming rancid.

Evidently benzoin is preferable to styrax for the preservation of ointments; but if the latter are to be used within two or three months, styrax would answer very well as a preservative.

Preparation of Red and Violet Colors.—Emil Jacobsen has patented a process, which consists in heating equal volumes of chinoline and benzotrichloride for some time to 130° C., removing unaltered chinoline by cold water, and extracting the coloring matter with boiling water; alkali precipitates the dark-red amorphous color-base, which is insoluble in ether, sparingly soluble in water, and freely soluble in alcohol The solutions of the base and its salts are violet-red, with a strong red-yellow fluorescence, which is also observed upon the wool and silk, dyed with the compound. Chinoline may be replaced by its homologues, also by pyridine and its homologues.—*Chem. Zeitung*, 1882, No. 67.

ANALYTICAL RESEARCHES AND INVESTIGATIONS.

COLLATED BY PROF. FREDERICK B. POWER, PH. D.

A New Method for the Recognition of Blood Stains. By G. Filippi.—It occasionally happens that the identification of blood stains by the formation of hæmatin crystals is not successful when the stains have been partially washed out or altered by decomposition. In such cases the author takes advantage of the iron contained in the blood as a means for their identification. The portions of the tissue which contain the blood stains are macerated for 24 hours in 95 per cent. alcohol to which one-twentieth of its weight of sulphuric acid has been added. The alcohol is then poured off, and fresh portions added until it ceases to assume a red color, after which the alcohol is made strongly alkaline by the addition of an alcoholic solution of ammonia. The liquid is then heated upon the water-bath to boiling, and filtered, when a residue of ammonium sulphate will remain upon the filter, which is washed with the alcoholic solution of ammonia. The liquid is then evaporated, and the residue ignited. If hæmatin be present, there appear on the sides of the porcelain capsule reddish spots, which, when dissolved in a drop of nitro-hydrochloric acid, yield with potassium ferrocyanide and sulphocyanide, the well-known reactions. It is recommended, also, to perform a control experiment with a portion of the tissue under examination which is free from stains.—*Chem. Zeitung*, No. 81, p. 1426, from *Giorn. Farm. Chim.*, 31, p. 481.

Volumetric Estimation of Iodide of Potassium. By P. Carles.—The volumetric method of estimation, recommended by Personne, the author finds to give perfectly satisfactory results when, in the place of water, 17·5 per cent. alcohol is employed for the solution of the potassium iodide and mercuric chloride.

As commercial potassium iodide frequently contains small amounts of potassium iodate, carbonate, chloride, and bromide, and sodium chloride, and it being of importance to know the influence of these bodies, the following two mixtures were prepared by the author, which were titrated in alcoholic solution with mercuric chloride:

	I.	II.
Potassium iodide,	70 per cent.	70 per cent.
Potassium chloride,	10 "	20 "
Potassium bromide,	10 "	—
Potassium iodate,	5 "	5 "
Potassium carbonate,	5 "	5 "

The first gave 70·5 per cent., the second 70 per cent of potassium iodide.

From the formula $X = \frac{17{,}5 \cdot 100}{n}$, in which n represents the degree of concentration of the alcohol to be standardized, the volume of alcohol may be calculated with sufficient accuracy which is required to be added to the water, in order to obtain 100 parts of 17·5 per cent. alcohol.—*Ibid*, p. 1425, from *Rép. Pharm.*, 38, p. 443.

A Delicate Test-paper for Gaseous Ammonia.—Kroupa dissolves fuchsine in water, and adds to the solution dilute sulphuric acid, whereby it becomes of a yellowish-brown color; the solution is then highly diluted and strips of unsized paper moistened therewith, which are afterward dried. This test-paper, which is of a beautiful yellow color, is applied in the dry state, and is capable of detecting an amount of ammonia corresponding to 0·0005 gram of ammonium chloride; the yellow color becoming changed to a beautiful carmine-red.—*Pharm. Zeitschr. für Russ.*, No. 50, 1882, from *Zeitschr. für Analyt. Chem.*, xxi., p. 391.

Hydrocinchonidine.—According to O. Hesse this alkaloid is frequently contained in commercial cinchonidine and homocinchonidine preparations, especially in the respective sulphates, when they do not form loose crystalline needles. In order to prepare hydrocinchonidine therefrom it is only necessary to convert them in the usual way into hydrochlorates, and to allow these to crystallize from water. The hydrochlorate of hydrocinchonidine thereby remains in the mother liquid, is obtained by evaporation, and finally obtained therefrom in a pure condition. It crystallizes from hot dilute alcohol in beautiful six-sided laminæ, and from strong alcohol in short prisms.

Hydrocinchonidine has the formula $C_{19}H_{21}N_2O$, and therefore bears the same relation to cinchonidine as hydroquinine to quinine; it melts at 229–230°C., and does not show in the acid sulphuric, acetic, and nitric acid solution, even when highly diluted, the slightest blue fluorescence, nor does it give with chlorine and an excess of ammonia any coloration.

Hydrochlorate of Hydrocinchonidine, $C_{19}H_{21}N_2O$, $HCl + 2H_2O$, forms short, six-sided prisms, which are readily soluble in water and in alcohol. If the neutral salt be dissolved in very strong hydrochloric acid, the acid salt crystallizes in colorless tables.

Oxalate of Hydrocinchonidine $(C_{19}H_{24}N_2O)_2$, $C_2H_2O_4$, is obtained by precipitating the hot aqueous solution of the hydrochlorate by means of oxalate of ammonium, whereby it separates upon cooling in small, colorless, shining anhydrous needles.

The neutral sulphate crystallizes with 7 (or 8?) molecules of water, but effloresces very readily; the acid sulphate crystallizes with 4 molecules of water.—*Archiv der Pharm. Bd.*, xvii, p. 860, from *Liebig's Ann. Chem.*, 204, p. 1.

A Method for the Separation of Picrotoxin from its Solutions as an Insoluble Salt. By R. Palm.—The author finds picrotoxin to be completely precipitated from its solution by ammoniacal basic lead acetate. By the decomposition of the lead precipitate, suspended in water, by means of hydrogen sulphide, and washing the lead sulphide with ammoniacal water until the latter no longer tastes bitter, a solution of picrotoxin is obtained, from which, after the evaporation of the solvent, it may be obtained in a crystalline form. This deportment of picrotoxin to basic lead acetate is considered of value for its separation from beer or in forensic investigations.—*Ber. der Deutsch. Ch. Ges.*, No. 16, 1882, p. 2758, from *Rep. für. Analyt. Chem.*, 1882, pp. 265–267.

The Determination of the Melting Point of Fats.—Kratschmer conducts this experiment by bringing the substance to be tested into a capillary tube, placing a drop of mercury upon it, and then sealing the upper end of the tube. At the moment when the body melts, the drop of mercury sinks. The experiment can be repeated as often as desired with the same specimen.—*Ibid.*, from *Zeitschrift für Analyt. Chem.*, 21, p. 399.

Purification of Carbon Bisulphide.—P. Palmieri recommends removing the stratum of water, with which commercial carbon bisulphide is usually covered, and then adding 2 or 3 per cent. of exsiccated sulphate of copper; the mixture is agitated, and when the copper salt has become black and subsided, and the odor of hydrogen sulphide has disappeared, the liquid is decanted or filtered, or better still, it may be rectified in the presence of a little exsiccated copper sulphate. By this treatment the disagreeable odor is completely removed, and in order to preserve the purity of the liquid, it is advisable to keep in it a small quantity of the copper-salt. The salt after having been used as above stated, may be ignited, treated with sulphuric acid, and again ignited, when it is again suitable for the above purpose.—*Zeitschr. Anal. Chem.*, xxi, 254.

THE CRYSTALLINE CONSTITUENT OF JAFFERABAD ALOES.[1]

By W. A. Shenstone.

It will be remembered that at the evening meeting of the Society, held in March, 1881, Mr. Holmes brought forward a specimen of aloes known in the Bombay market as Jafferabad aloes, which he had received from Dr. Dymock. Shortly afterwards I proposed to Mr. Holmes that an examination of its crystalline constituent would, perhaps, be interesting, and he very kindly obtained a supply of the drug for me, which I received during the first half of the present year.

I found in a preliminary examination of the substance that although the method employed for obtaining aloin from Barbadoes aloes was not without result when applied to the Jafferabad aloes, yet that a better result could be obtained by Histed's method.

Accordingly about 1½ pounds of the powdered aloes was treated with enough proof spirit to make a thin paste, and after standing for a few hours was enveloped in folds of stout calico and submitted to powerful pressure, by which means I found that a yield of about 28 per cent. of crude aloin could be obtained.

This crude aloin was purified by twice crystallizing from water, then by crystallizing several times from dilute spirit and finally by crystallizing twice or thrice from rectified spirit. Portions of the crops of crystals thus obtained were burnt with the following results:—

I. ·1104 gram of aloin which had been once crystallized from rectified spirit and dried *in vacuo* over sulphuric acid gave ·2438 gram of CO_2 and ·0561 gram of H_2O.

II. ·1380 gram of aloin which had been twice crystallized from rectified spirit and dried *in vacuo* over sulphuric acid gave ·3042 gram of CO_2 and ·0696 gram of H_2O.

Corresponding to—

	Carbon	Hydrogen.	Oxygen.
I	60·22	5·64	34·14
II	60·11	5·69	34·29

The aloin was, therefore, evidently in a pure state.

1·2375 gram of pure air-dried aloin dried over sulphuric acid in a vacuum lost ·1987 gram of water, corresponding to 16·0 per cent.

When bromine water was added in excess to an aqueous solution of

[1] Read at an Evening Meeting of the Pharmaceutical Society, December 6, 1882.

the aloin a copious yellow precipitate fell. This was collected after having been in contact with excess of bromine water for an hour, washed, dried, and crystallized three times from spirit. The brominated aloin was in beautiful yellow crystals, which were rather soluble in cold alcohol, and were somewhat more stable than the aloin itself. It retained only a trace of water when dried in a vacuum over sulphuric acid, which was given off on heating to 100° C. to 110° C. ·2526 gram of the perfectly dry substance gave ·2539 gram of silver bromide, corresponding to 42·75 per cent of bromine.

In 1875 Dr. Tilden proposed, as the result of the consideration of a number of analyses of aloins and their derivatives made by himself and others, that the aloins obtained from Barbadoes and Zanzibar aloes might be considered isomeric bodies, with the empirical formula $C_{16}H_{18}O_7$, which also agrees closely with the results of his analyses of nataloin. This formula requires 59·62 per cent. of carbon and 5·59 per cent. of hydrogen. Its tribromo derivative requires 42·93 per cent. of bromine.

No. 1*a*.

No. 1*b*.

No. 2.

It will be seen that of the numbers obtained in my analyses those for the hydrogen and bromine agree very closely with these, and that the proportion of carbon, though a little high, also agrees fairly well.

The water of crystallization found, 16 per cent., is rather more than the amount which would correspond to three molecules, *i. e.*, 14·3 per cent. The difficulty of getting air-dried aloin of constant composition, however, is so great that the result is not of much value.

Dr. Tilden found that air-dried zanaloin when dried over sulphuric acid in a vacuum, gave off about 14 per cent. of water.

In addition to the above work, the following comparative observations were made; in making them some of my aloin from Jafferabad

aloes and a portion of Dr. Tilden's zanaloin, which he kindly gave me for the purpose, were employed.

There is no distinguishable difference in the crystalline form of the two aloins.

In the above engravings, which are from photographs, and, therefore, absolutely trustworthy,[1] 1*a* and 1*b* are of the aloin of Jafferabad aloes,[2] and 2 is of zanaloin of Dr. Tilden's preparation. Two photographs were taken of my aloin, as with the available slide it was not possible to get good pictures of both the large and small crystals at once.

Neither of them gives any change of color in the cold when moistened with ordinary strong nitric acid; both of them are reddened by fuming nitric acid. And the Jafferabad aloin, by prolonged treatment with nitric acid, yields chrysammic, aloetic, picric, and oxalic acids, as zanaloin and barbaloin do.

Jafferabad aloin, when treated with potassium chlorate in a hydrochloric acid solution, yields a chloro-body resembling that given by zanaloin, and when heated with acetic anhydride gives an acetyl compound similar to acetyl-zanaloin.

Both of them, when treated with strong sulphuric acid and potassium bichromate, give a violet coloration closely resembling that given by strychnia, but quickly fading to *green*.

These results seem to leave no doubt that the aloin of Jafferabad aloes is identical with that from Zanzibar aloes, though I should state that the color of the former is distinctly a lighter shade of yellow than that of the latter.

Up to the present time four aloins have been examined somewhat minutely, viz., those known as barbaloin, zanaloin, nataloin, and that which is the subject of the present communication. In addition, socaloin has been partly examined and is believed to be identical with zanaloin.

As the adoption of a new name for every fresh variety of aloin examined is likely to be a source of some inconvenience, and as there is an obvious advantage in adopting a nomenclature which will group together those aloins which are most nearly alike, and also because the aloins seem likely to fall into a few groups, I venture, in concluding

[1] These were kindly taken for me from microscopic slides by Mr. Woollet, of Colchester, who, with my brother, has lately taken a good deal of interest in such work.

[2] The magnification in each is about 180 diameters.

this paper, to make the following suggestion, which I think will make a comprehension of the sources and properties of these bodies a little more easy to attain than it is at present.

Since nataloin differs so distinctly from all the rest, it will be convenient to retain that name for that substance.

And since zanaloin, socaloin, and Jafferabad aloin differ so little from barbaloin, they may be conveniently classed together as "barbaloins," distinguishing the aloin of Barbadoes aloes, which was first discovered, and differs in a few particulars from the others, as α-barbaloin, and the later discovered aloins, between which no distinct differences are known, as β-barbaloin. The main points of difference among these bodies could then be tabulated thus:—

1. Nataloin, obtained from Natal aloes, yields only picric and oxalic acids by treatment with nitric acid. Is not reddened, even on heating, by that reagent.

2. Barbaloins yield chrysammic, aloetic, picric, and oxalic acids by treatment with nitric acid.

They may be divided into—

a. α barbaloin, obtained from Barbadoes aloes. Is reddened in the cold by ordinary strong nitric acid.

b. β-barbaloin, obtained from Socotrine, Zanzibar, and Jafferabad aloes. It is not colored by cold nitric acid, but gives an orange-red coloration when heated with it, and also gives a coloration in the cold with fuming nitric acid.

The point is not one of great importance, but I think this or some similar system, might now be conveniently adopted, in place of giving a new name to each aloin even when it is in no way different from others already known.—*Clifton College*, 1882.

Presevation of Butter.—Dr. W. Hagemann has observed that cow butter contains 0·5 to 0·6 per cent. of milk-sugar, which under the influence of bacteria is transformed into lactic acid, and this liberates from the glycerides the acid, containing less carbon. It is obvious from this that summer-butter becomes rancid more rapidly and strongly than winter-butter, and that for the preservation of butter two methods may be adopted, viz., either the lower fat acids are removed by soda solution, as proposed by Adolf Mayer and Dr. Clausnitzer, or else the milk-sugar must be removed, or its decomposition prevented by suppressing the vegetation of the bacteria.—*Chem. Ztg.*, 1882, No. 67.

GLEANINGS IN MATERIA MEDICA.

BY THE EDITOR.

Chemistry of the Nymphæaceæ. By W. Grüning.—Nuphartannic acid $C_{56}H_{56}O_{37}$, which is present in the seed of *Nuphar luteum*, in considerable proportion, is a light yellow mass, easily rubbed into powder, precipitates ferric salts blue-black, and shows the general reactions of tannins; it is associated with nuphar-phlobaphene, $C_{56}H_{50}O_{35}$.

The rhizome of *Nymphæa alba* contains tanno-nymphæin, $C_{56}H_{52}O_{36}$, and nymphæophlobaphene, $C_{56}H_{48}O_{36}$. The tannin proper, nymphæatannic acid, $C_{56}H_{58}O_{38}$, forms a brown-red transparent mass, which readily yields a pale yellow powder, and has the general reactions of the tannins; when heated in a sealed tube, placed in the water-bath, in the presence of dilute sulphuric acid, it is split into ellagic acid, gallic acid, and two substances, one of which is easily oxydized in the air to phlobaphene, while the other yields two bodies resembling viridinic acid. The nuphar tannin is split into an acid resembling ellagic acid; a compound precipitating gelatin and precipitated by alcohol; gallic acid and a substance changing by oxidation to a compound resembling viridinic acid.—*Chem. Ztg.* 1822, No. 67, from *Arch. d. Phar.* [3], xvij, p. 736.

The Tambor.—Some twenty years ago, Dr. Dorat, of Sonsonate, sent to the late Daniel Hanbury, dried specimens of this tree, accompanied with the following note: "The fruit, about the size of a pear, contains three beans, jet black, which, by pressure, yield a very fine oil in large quantity, rather pleasant to the taste, and resembling castor oil in its purgative effect, with the advantage that it does not gripe. The leaf is large and is used here for packing cheese, on account of its strength. Flowers in December, fruit ripe in February or March. The seeds are covered with an exceedingly hard, black, thin epidermis, with a white soft pulp containing the oil, which, besides its purgative quality, burns well. Seed vessels grow in large bunches." W. B. Hemsley, A.L.S., now describes this plant as a new species, under the name of

Omphalea oleifera, Hemsley.—Leaves large (specimen five inches in diameter), petiolate, papyraceous, somewhat stellately puberulate, with deciduous hairs, suborbicular, deeply ordate; flowers monoecious; the panicles terminal, broad, paniculate, puberulate; bracts small, petiolate, narrow, about an inch long, veined, puberulate; sepals 4,

decussate, orbicular, ciliolate; anthers 2; ovary glabrous; fruit three seeded; seeds black.

The same author describes also a plant collected by Sutton Hayes, at Acajutla near Sonsonate, as follows:

Omphalea cardiophylla, Hemsley.—Leaves long-petiolate, papyraceous, very smooth, suborbicular, deeply cordate at the base, acuminate, obtuse (about a foot in diameter), undulate; petiole with 2 glands above, fleshy; staminate flowers in narrow terminal panicles, a foot or more in length; bracts oblanceolate, about 2 inches long, short-petiolate; sepals 4, orbicular, ciliolate; anthers 2, sometimes 3.—*Phar. Jour. and Trans.*, 1882, Oct. 14, p. 301.

Starch in Belladonna root is, according to H. Werner, always present in autumn, when at and after the ripening of the fruit starch is produced and deposited in the root, to be used in the succeeding spring for nourishing the plant. To obtain the root, rich in starch, it should not be collected until the flowers have begun to fade.—*Archiv d. Phar.*

Agaricus ruber, Pers., contains, according to T. L. Phipson, a rose-red coloring matter, ruberin, which appears bright blue by transmitted light; being soluble in water, it is washed out of the head of the fungus by a heavy fall of rain. Ether extracts from the fungus a yellowish-white alkaloid agarythrine, which has a bitter, afterwards burning, taste somewhat like aconitine; its chloride is soluble, but the sulphate insoluble in water, the latter dissolving in alcohol; it dissolves in nitric acid with a red color, and is colored red by chlorinated lime and afterwards bleached. On agitating the solution of the alkaloid with ether, it is oxidized by the air to a red coloring matter, which is probably the cause of the red color of the surface of the fungus.—*Chem. News*, 1882, p. 199.

A Fatal Dose of Extract of Male Fern is reported on in the "Ceylon Observer." The prescription was dispensed as follows:

℞	Extr. æth. Filic. Mar. . .	1½ oz.
	Pulv. Kamalæ . . .	3 drms.
	Mucil. Acac., Syrup. simpl. .	aa q. s.
	Aquæ Cinnam. . . .	ad 4 oz.

M. S. Half to be taken at bed-time and half at 2 A. M.

The dispenser left out powdered pomegranate root, 3 drams, signifying that he done so to the prescriber. After taking the first dose, the patient was so distressed, that he sent to the prescriber to know whether

he should take the remainder, and received an answer in the affirmative. He did so and the tape worm was expelled, but the patient became worse with vomiting and purging, and died in a few hours.

The prescription as actually dispensed closely resembles one attributed in Naphey's "Medical Therapeutics" (6th edit. p. 331) to the late Dr. William Brinton, who, it is there said, "believes this superior to all other combinations for the ejection of tæniæ." The dose is precisely the same in both cases, but in the book it is possibly a misprint for 1½ drachms.—*Phar. Jour. and Trans.*, 1882, Oct. 14, p. 312.

The poison of the stinging nettle is usually stated to be formic acid. But Alfred W. Bennett is inclined to believe that the irritant fluid always has an alkaline reaction.—*Phar. Jour. and Trans.*, 1882, Oct. 14, p. 320.

Honey.—Eugene Dietrich has repeatedly observed that good American honey may be more easily obtained than German honey of good quality, the latter, on keeping, becoming acid by fermentation, at the same time acquiring an unpleasant taste, and when clarified, of a dark color and a caramel-like taste; but fresh German honey yields, on clarification, an excellent product. The cause for the better keeping qualities of American honey has not been ascertained.—*Rundschau*, 1882, p. 662.

The Volatile Oil of Sandal-wood, obtained by distilling the wood with water, is described by P. Chapoteaut as a somewhat thick liquid of sp. gr. 0·945 at 15° C, and boiling between 300° and 340° C. It consists almost entirely of two oxygenated bodies, the more abundant of which is $C_{15}H_{24}O$ (boiling point 300°), and the other $C_{15}H_{26}O$ (boiling point 310°). When treated with phosphoric anhydride, the oil yields two hydrocarbons, $C_{15}H_{22}$ (boiling point 248°) and $C_{15}H_{24}$ (boiling point 260°). Oil of cedar, when purified from oxygen compounds has the composition and boiling point of the former, and is probably identical with it, while the latter is either isomeric or identical with oil of copaiba. The two constituents of oil of sandal-wood are, probably, the one an alcohol and the other an aldehyde. By heating in sealed tubes at 310° C., and subsequent treatment with phosphoric anhydride, a cymene, boiling at 175° to 180° C., is obtained.—*Jour. Chem. Soc.*, 1883, p. 76, *Bull. Soc. Chem.* [2], 37, p. 303.

PRACTICAL NOTES FROM VARIOUS SOURCES.

BY THE EDITOR.

Preparation of Bougies.—Labler manipulates as follows: White gelatin 2 parts is dissolved in water 8 parts, and glycerin 1 part, and the solution heated in a water-bath, until a drop of it placed upon a glass or marble slab has the proper consistence after cooling; the necessary quantity of tannin (?), iodoform, etc., dissolved in, or triturated with a little water, is then added, the whole stirred and heated until the water has been evaporated, when the mass is sucked up in glass tubes of the requisite diameter. The glass tube is closed with the finger, and then laid upon a cool slab. The glass tube having been previously cut with a file near the middle, and united again by pasting a strip of paper around the joint, the paper is soaked off, the two halves of the tube are sufficiently pulled apart, so as to withdraw a small portion of the bougie, and by means of the spritz a little water is dropped between the glass and the mass, when the latter may be easily withdrawn from one-half of the tube, and after a similar manipulation, also from the other half. In this manner bougies 0·5 meter long may be easily obtained, and afterwards cut to suit.—*Rundschau*, 1882, p. 676; from *Casopis cesk. lék.*

The oiling of the interior of the glass tube, previous to filling it with the hot gelatin solution, as suggested by F. Friedrichs in 1880, appears to facilitate the subsequent withdrawing of the bougie by pushing it out of the tube by means of a suitable rod. (*Editor Am. Jour. Pharm.*)

Solubility of Morphia Salts in Water.—D. B. Dott has determined the solubility by the method of digestion at the temperature of 60°F., and from a mean of several experiments arrived at the following results:

One part of

Morphine hydrochloride, $MHCl{\cdot}3H_2O$	is soluble in		23·9	parts of	water,
Morphine sulphate, $M_2H_2SO_4{\cdot}5H_2O$	"	"	23·01	"	"
Morphine acetate, $M{\cdot}C_2H_4O_2{\cdot}3H_2O$	"	"	2·44	"	"
Morphine tartrate, $M_2C_4H_6O_6{\cdot}3H_2O$	"	"	9·7	"	"
Morphine meconate, $M_2C_7H_4O_7{\cdot}5H_2O$	"	"	33·9	"	"

In the formulas given, M signifies $C_{17}H_{19}NO_3$.

Phar. Jour. and Trans., Nov. 18, 1882, p. 401–403.

Emplastrum Ichthyocollæ impermeabile.—Eugene Dietrich has examined a Russian water-proof courtplaster, and gives the following direc-

tions for its preparation: Rub the requisite quantity of castor oil necessary for making flexible collodion, with a little zinc-white, add the collodion, and dip glass plates into the mixture, repeating this twice or three times until the film of collodion is of the desired thickness; then spread upon it a concentrated solution of isinglass, and when dry, remove from the glass plate.—*Rundschau*, 1882, p. 662.

Preparation of Tannate of Quinine.—Julius Fiebert recommends the following process for obtaining this compound tasteless: Dissolve 20 parts of sulphate of quinine in 80 parts of water with the aid of sufficient dilute sulphuric acid, dilute with sufficient water to obtain about 1000 parts of solution, and add thereto a solution of sodium carbonate 40 parts in water 160 parts. Collect the precipitated hydrate of quinine in a filter, wash well with cold distilled water, drain, and while still moist, dissolve in 200 parts of 96 per cent. alcohol, filter, and drop the filtrate, with continued agitation, into a clear solution of 60 parts of tannin in 1000 parts of cold distilled water; set aside for several hours, collect the nearly white precipitate upon a moist filter, wash with distilled water of 30°C., until the filtrate has no longer any astringent taste, drain, dry upon bibulous paper at a moderate temperature, and rub to powder. The yield is between 60 and 65 parts.—*Zeitschr. Oester. Apoth. Ver.*, 1882, p. 431.

Kairine is an alkaloid, which has been prepared synthetically by Professor Dr. Otto Fischer. Experiments have shown, that only such hydrated chinoline derivatives are free from local action, and at the same time are capable of lowering the febrile temperature, the nitrogen, of which, besides its union with two atoms of carbon in the chinoline ring, is united with the carbon of a methyl group, or of another alcohol radical. Such action was observed from the hydruret of oxychinoline-methyl, having the formula $C_{10}H_{13}NO$, and which has been called *kairine*.

For obtaining it, *oxychinoline* is first prepared by C. Bedall and O. Fischer ("Berichte, 1881, p. 442 and 1366)", from Lubavin's (1869) chinolinesulphonic acid, by melting it with caustic soda, dissolving in acidulated water, adding sodium carbonate, and distilling with a current of steam. It is regarded as identical with the *chinophenol* of Weidel and Cobenzl. (1880.)

The potassium salt of oxychinoline, is readily converted into the methylic ether, *methoxychinoline* or *chinanisol*, $C_{10}H_9NO$, by treatment

with methyl iodide ("Ibid, p. 2,570"). The compound named subjected to reduction by tin and hydrochloric acid, unites with 4 atoms of hydrogen, forming *methoxychinoline tetrahydruret* $C_{10}H_{13}NO$, which is a heavy thick oil, soluble in hot water, freely soluble in ether and ligroin, and having a sweetish odor, somewhat resembling that of methylaniline, and becoming pungent on heating. Ferric chloride imparts an intense red color, which disappears gradually on heating. The hydrochloride, $C_{10}H_{13}NO.HCl$, is precipitated in crystalline floccules on passing a current of dry hydrochloric acid into an etherial solution of the base, and crystallizes from alcoholic ether in thick, colorless prisms.

Professor Dr. Filehne, of Erlangen ("Berl. Klin. Woch."), describes the *kairine hydrochloride* as a gray-yellowish crystalline powder, which is easily soluble in water, and has a bitter saline, at the same time aromatic odor, resembling somewhat that of guaiacol, but not burning. Doses of 1·0 or 1·5 gram taken by healthy adults, are without any physiological action. The dose for sick adults, particularly if weakly, should not exceed 1·0 gram every two hours, to prevent cyanosis. Doses of 1·0 gram should be given at intervals of not more than two and a half hours, and 0·5 gram every 1½, or not exceeding 2 hours; the author prefers to give 0·3 to 0.5 gram every hour, or hour and a half.

Skim-milk as Food.—Ritthausen regards skim-milk as a valuable food for man and beast, 2·8 liters of it containing as much nitrogenous matter as a pound of meat, and it is much cheaper. J. Stohmann has calculated that 1 liter skim-milk corresponds in nutritive value to 160 grams of boneless meat.

J. Koenig shows that skim-milk is by far the cheapest and most nutritious food for adults, and that the proportion of the cost of 1,000 nutritive units is 41·7 for skim-milk, 71·4 for pork, 81·7 for butter, and 201·2 for eggs.—*Jour. Chem. Soc.*, 1883, p. 102; from *Bied. Centr.*, 1882, p. 641, 693.

Alteration of Preserved Milk.—Several years ago Naegeli observed that preserved milk, which has not been heated to a sufficiently high temperature, or not long enough, gradually acquires an intensely bitter taste, the casein at the same time being peptonized; he ascribed the change to the influence of schizomycetes ("Naegeli, Theorie der Gährung, p. 89"). Recently Meissl examined a milk ("Berichte, 1882, p. 1259"), which had been preserved by heating, and keeping it in well sealed bottles. After one year it had acquired a bitterish taste; the fat was somewhat rancid and bleached, the milk-sugar unaltered 4 to 5 per

cent., albumen and casein were mostly peptonized, and minute quantities of leucin, tyrosin, and ammonia were found, together with traces of acids, the nature of which was not established; organized ferments could not be observed, and the changes were ascribed to the long continued mutual action of the constituents upon one another.

C. Loew ("Berichte, 1882, p. 1482") states, that milk which has been heated for some time to 120°C. will keep for a number of years. But he examined a milk which had been kept for 8 years after having been heated to 101°C. for 40 minutes, and which was brownish, of a faint acid reaction, nearly inodorous, but intensely bitter. The milk-sugar had been completely transformed into lactose and glucose, and the casein and albumin into peptone, so that potassium ferrocyanide and acetic acid produced not even a turbidity, while tannin, alcohol, mercuric nitrate, and phosphotungstic acid gave bulky precipitates. A portion of the peptone had been converted into leucin, tyrosin, and ammonia, while a granular deposit, which was insoluble in boiling water and alcohol, appeared to be an anhydride of tyrosin.

Perfumery.—A Vomácka recommends the following preparations as being of excellent quality; the alcohol used should be distilled from wine, except where otherwise directed.

Eau de Brettfeld, digest for 3 days orris root, 230 grams, in spirit of wine 2,000 grams, and add a tincture prepared from spirit of wine 300 grams, oil of lemon 70 drops, Turkey oil of rose 60 drops, oil of neroli bigarade 70 drops, and musk 0·15 gram.

Eau de Cologne.—Dissolve oil of orange and oil of lemon, each 15 grams, oil of bergamot 6 grams in rectified spirit of wine 3,000 grams. Also dissolve oil of neroli petals 1 gram, oil of neroli bigarade 1·5 gram in rectified spirit of rye 1,000 grams. After 5 or 10 days, mix the two solutions. The fragrance improves by age; but a more delicate odor is produced by distilling the mixture. To the distillate, oil of rosemary 2 grams is added.

Extrait d'Heliotrope.—Dissolve heliotropin 1 gram, in rectified spirit of wine 100 grams; the addition of ambergris 0·1 gram renders the perfume more permanent.

Sachet d'Heliotrope.—Dissolve heliotropin 1 gram, in spirit of wine 25 grams, and incorporate the solution with granulated orris root 200 grams; after partial drying in the air, put into suitable bags. Black silk absorbs the odor best and retains it longest; next follow in the order given blue, red, green, and yellow silk.—*Rundschau*, 1882, p. 651; from *Casopis cesk. lék.*

VARIETIES.

SHOE-BLACKING.—Mix rapeseed oil, 1 liter, with syrup 2·5 kilos; water, 5 kilos, and ivory-black, 5 kilos; then add slowly, stirring constantly, sulphuric acid, 2·5 kilos, when the mixture becomes hot and thick; finally, stir in water, 2·5 kilos.

Another formula is as follows: Mix intimately fine ivory-black, 6 parts; syrup, 28 parts; sugar, 4 parts; fish oil, 3 parts; and sulphuric acid, 1 part; set aside for 8 hours and stir into the mixture decoction of tan, 4 parts; ivory-black, 18 parts, and sulphuric acid, 3 parts, when the mass may be poured into boxes.

Shoe-blacking free from sulphuric acid is made as follows: Boil extract of logwood, 1 part, and bruised nut-galls, 30 parts with 25 times their weight of strong vinegar, express the liquid, add copperas, 8 parts, and set aside for twenty-four hours; decant the clear liquid and add gum-arabic, 8 parts; rock candy, 100 parts, and syrup, 80 parts; strain and mix with alcohol, 50 parts; solution of shellac, 40 parts, and finally, powdered indigo, 40 parts.—*Zeitschr. Œster. Apoth. Ver.*, 1882, p. 435; from *Polyt. Notizbl.*

RUBBER LUBRICATOR FOR BELTS.—5 parts of India rubber are cut fine and melted together with 5 parts oil of turpentine in an iron, well-covered vessel; then add 4 parts of rosin, stir well, melt and add 4 parts of yellow wax, stirring constantly while melting This mixture while warm is added, with constant stirring, to a melted mixture of 15 parts fish oil and 5 parts of tallow, and the whole is agitated until it has congealed. The mass is applied to old belts upon both sides in a warm place, and when the belts are in use, from time to time upon the inner side. By this treatment they become very durable.—*Chem Centralblatt*, 1882, p. 768.

CEMENT FOR AQUARIA, STONE, WOOD, AND GLASS.—Bienert recommends the following: Melt together crude gutta percha and black pitch, of each, 10 parts, and common turpentine, 1 part. The mass may be rolled into sticks, which, for use, are melted like sealing-wax. The proportion of turpentine is varied according to the hardness of the pitch.—*Rundschau*, 1882, p. 686; from *Phar. Zeit. Russl.*

CEMENT FOR GLASS.—Dissolve finely cut caoutchouc, 1 part, in chloroform, 64 parts, add finely powdered mastic, 16 parts and macerate until dissolved. The cement is applied with a brush. A larger proportion of caoutchouc renders the cement elastic.—*Zeitschr. Œst. Apoth. Ver.*, 1882, p. 435; from *Polyt. Notizbl.*

PASTE FOR LABELS, suitable for bottles, is made by soaking glue in strong vinegar, then heating to boiling and adding flour. The paste is very adhesive, and in a wide-mouthed bottle may be preserved without decomposition.—*Zeitschr. Œst. Apoth. Ver.*, 1882, p. 435; from *Polyt. Notizbl.*

VARNISH FOR LABELS.—Sandarac, 53 parts, mastic, 20 parts, camphor, 1 part, oil of lavender, 8 parts, Venice turpentine, 4 parts, ether, 6 parts, and alcohol, 40 parts; macerate for several weeks, agitating frequently until dissolved, and decant or strain from the impurities. The varnish dries rapidly to a colorless, smooth and glossy layer.—*Rundschau*, 1882, p. 686; from "*Seifensieder.*"

TO DISGUISE THE ODOR OF IODOFORM.—We have had many queries as to how this may be best accomplished; we therefore give every reliable report on the subject The following is from the "New York Medical Journal and Obstetrical Review:" "Having tried nearly all the devices that have been suggested for mitigating or disguising the ordor of iodoform, and found them all of little or no avail, we have lately come nearer to the object by using oil of eucalyptus, according to the following formula:

R	Pulv. iodoform, ...	ʒ ss
	Oil Eucalypt., ...	ʒ ss
	Vaselin, ...	ʒ iv.

M. ft. ungent.

This ointment is not without odor, but the odor is not that of iodoform." —*Med. and Surg. Rep.*, Jan. 13, 1883.

SYMPTOMS OF POISONING BY IODOFORM.—In view of professional responsibility attending the use of this agent, and the frequency of its application in gynæcological practice, we deem it proper to insert the following observations resulting from the experiments of Schede at the hospital of Hamburg. The following are the toxic effects observed by Schede:

I. Increase of temperature, which rises to 104° F. and above, without appreciable cause.

II. Coincident with the fever a physical depression is manifested,—headache, loss of appetite, the breath bears the odor of iodoform, the pulse is frequent, small, soft, and very compressible. These symptoms cease with the cessation of employing this therapeutic agent.

III. The frequency of the pulse may rise to 150 to 180 pulsations per minute. Added to the first symptoms of inquietude is a fever, which becomes more and more intense; and if the use of the medicine is not discontinued, death may result. A sign of the gravest portent is the appearance of symptoms of acute meningitis or of depressive phenomena analogous to melancholia.—*Phila. Med. Times*, Jan. 1883; *Obstetric Gazette.*

USE OF IODOFORM.—The "Medical Times and Gazette" says that Dr. Langsteiner reports a case of iodoform poisoning. The patient, an octogenarian, was operated on for submaxillary cancer, and about one drachm of iodoform was used as an antiseptic dressing. Death ensued in six days, the prominent symptoms being cerebral.

Dr. Benzan reports favorable results in six cases of diphtheria treated by local applications of finely-powdered iodoform by means of a small camel's hair brush.—*Med. and Surg. Rep.* Jan 13, 1883.

BAD EFFECTS OF IODOFORM.—In view of the increasing use of iodoform in the hospitals of Europe and America, the effects of this new agent

are worthy of careful study. It is spoken of as a rival to carbolic acid or superior to it; hence, its good and bad effects should be known as widely as possible. Dr. Fifield presents to the attention of the Boston Society for Medical Improvement, the consideration of a case of death in his own practice which he thinks was the result of a careful application of a very small quantity to ulcerated surfaces.—*Dental Cosmos*, Jan. 1883, p. 49; *Medical Investigator*.

IODIA AND BROMIDIA.—"Iodia, the ideal alterative" which claims to contain, (besides other ingredients) in "each fluid drachm, 5 grains iod. potas. and 3 grains phos. iron," is found on analysis made by A. B. Lyons, M. D., and published in the Detroit "Lancet," to contain a little less than 3 grains of potassium iodide and some traces of iron in each fluid drachm.

"Bromidia" claims to contain "in every fluid drachm 15 grains each of pure brom. potas. and purified chloral, and one-eighth grain each of gen. imp. ext. cannabis ind. and hyosciam." The results of an analysis showed that it only contained 82 grains of potassium bromide, and about 90 grains of chloral hydrate in each fluidounce, instead of 120 grains of each, and that the cannabis indica was "non est."

From these facts the author concludes that in these preparations (as well as in many others) "the published formula is not actually followed by the manufacturers, or the manufacturers deliberately use one formula and publish another for reasons best known to themselves.—*Pacific Med. and Surg. Jour.*, 1883, Jan., p. 365.

DETECTION OF DRUGS IN THE MOTHER'S MILK.—Dr. Ewald has made some researches on the appearance of drugs in the mother's milk, experimenting with iodine, iron, mercury, lead, quinia, and alcohol. Iodine and iron were discovered in the milk. He refers to Dolan's successful experiments with arsenic. Mr. Ewald did not find arsenic in the mother's milk —probably due to the smaller doses given—Translated from *Berlin. Klin. Wochens.*, for the "American Practitioner," Dec.,1882.

DEATH FROM OIL OF TANSY.—A servant girl in Trenton, N. J., recently died from a dose of oil of tansy, taken probably to produce abortion. Post-mortem examination showed that she was not pregnant.—*Chicago Med. Review*, 1883, p. 16.

MINUTES OF THE PHARMACEUTICAL MEETING.

PHILADELPHIA, January 16, 1883.

In the absence of the President Mr. Robert England was called to preside. The minutes of the last meeting were read and approved.

Prof. Maisch presented, on behalf of Mr. Andrew Blair, a copy of a work entitled, "Plates of Fifty American Plants," published by the Philadelphia College of Pharmacy, the drawings having been made by Prof. W. P.

C. Barton, of the University of Pennsylvania. On motion, the thanks of the College were returned to Mr. Blair for this donation.

Dr. Seiler then delivered an address on *nose and mouth breathing*, commencing by explaining the anatomy of the nose and proper passages for breathing. The means of controlling or removing the hypertrophies which produce obstructions preventing nose-breathing were explained. This is effected by means of the galvanic battery heating a platinum wire to a dull, cherry-red heat when they are in the anterior fossa; but when they are in the posterior fossa they are removed by a snare of steel wire passed through a tube and tightened upon the polypus until it is cut off, and by burning the root or base by means of a platinum wire heated by the battery, which prevents its growing again. To keep the air passages through the nose clear, a solution of common salt, fifty-six grains to the pint of water, about the temperature of the blood, is applied by a nasal douche, or by snuffing it up from the hand. Sometimes a solution capable of softening the crusts of hardened matter in the nostrils is required, when *Dobell's solution*, consisting of bicarbonate of sodium ʒi, borate of sodium ʒi, carbolic acid ʒss, of glycerin ℥ss, and two pints of water, is found best adapted to this purpose. The subject was well illustrated by large colored plates and diagrams, and by exhibiting and explaining the various instruments used in the surgical treatment of hypertrophies.

Mr. Wm. B. Thompson moved, that the Chair, on behalf of the meeting, tender our thanks to Dr. C. Seiler for his very interesting and instructive lecture.

Dr. Miller thought that the eminently practical character of Dr. Seiler's remarks made them worthy of the attention of all present.

The Actuary was directed to advertise the lecture for the next pharmaceutical meeting, and invite the ladies of the members, as well as the druggists generally.

Prof. Maisch read a paper, by Mr. Alonzo Robbins (see page 65), on the *Fluid Extracts of the New Pharmacopœia*, and Mr. Robbins was requested to continue his paper on the history of the fluid extracts; the paper was referred to the Publishing Committee, and the thanks of the meeting were tendered to the author.

Mr. Wm. B. Thompson read a paper on *Prescription Scales and Weights* (see page 14), which was referred to the Publishing Committee.

Mr. W. C. Franciscus, a member of the present senior class, exhibited an apparatus for gelatin-coating pills, adapted to the wants of the apothecary. It consists of a water-bath suitable for keeping the solution of gelatin in a tray with 24 hemispherical cavities, in which the pills are thrown, and a rod bearing 24 needles, guided by two brass rods, which enables the operator to take up all the pills at once, and after immersion in the gelatin solution to remove them; the rod being secured to a pin, upon which it is free to revolve, is then rotated rapidly, which motion dries the pills in a short time. A piece of metal with twenty-four slots in it suffices to remove the pills at a single motion of the hand, and they fall into the receiving tray. On motion, adjourned.

T. S. WIEGAND, *Registrar.*

EDITORIAL DEPARTMENT.

THE PROPERTY IN PRESCRIPTIONS.—We have discussed this question repeatedly in this Journal, so that it would seem to be entirely unnecessary to again refer to it, if it was not for an expression by the "London Lancet," which in our opinion, is based on equity and free from sentimentality. We copy from the "Pharmaceutical Journal and Transactions," January 6, page 554.

"In the 'Lancet,' last week, a case is put by a patient who received a prescription from his doctor, with an intimation that it could only be made up at a certain establishment. Some time afterwards, considering himself to be in need of the same medicine, he took the prescription to the same chemist, who, however, refused to make it up on the ground that he had been told by the doctor not to dispense it without his sanction, and this statement was confirmed on communicating with the medical man. The patient contends that the prescription is his property, and that he is free to have it made up every day if he chooses, and asks the opinion of the editor of the 'Lancet' on the point. The answer given, which at any rate cannot be said to be wanting in 'lucidity,' is as follows: 'A medical man is at liberty to make his own terms as to attendance, but the system described in our correspondent's letter is not generally practiced or approved. A medical man either dispenses or prescribes. If he prescribes, the prescription ought to be the property of the patient, to be used when and how he pleases, and ought to be written so that it may be compounded by any legally qualified chemist.'"

LIEBIG'S EXTRACT OF MEAT.—We learn from the "Pharmaceutical Journal and Transactions," November 19, 1882, that a judgment has been rendered by Justice Field, in a suit brought by the Liebig's Extract of Meat Company, against R. W. Anderson, who is the manufacturer of an article called "Baron Liebig's Extract of Meat." It was claimed that the use of the name was an infringement on the right of the Company; but the judge, after a full review of the testimony, decided that the Company possessed no exclusive right to the use of either the process or the name, and that the liberty which there is for every man to sell his goods by the title which he thinks most attractive should not be restrained unless it is proved that what he is doing is reasonably calculated to deceive. Such an attempt at deception was not found in the mere use of the name or in the similarity of the jar, which is capped in a different manner from that used by the Company, and is supplied with a different label, bearing neither a certificate nor the signature of Liebig, but displaying his portrait.

In the evidence it was brought out that the so-called Liebig's process was discovered and published by Proust, in 1801, that Liebig made the process more practicable in 1847, and that, after a demand for the article as food had been created, in 1863 he became associated with the Fray Bentos Company, he and Professor Pettenkofer receiving two per cent. of the net profits realized for examining the extract and for allowing it to be sold with his signature attached.

About sixteen years ago a similar case was decided in favor of a Liebig's extract of meat, manufactured in Australia, for Allen & Hanburys, of Lon-

don, and it may now be taken for granted that this article with which Liebig's name is so prominently and deservedly associated, may henceforth be manufactured and sold as such without further interference.

DOVER'S POWDER.—It is well-known that the Dover's powder as at present recognized by most pharmacopœias is a far simpler preparation than it was when first introduced; but the name of the inventor remains coupled with the compound opium powder, though but few persons are probably conversant with the history of the man whose name is thus perpetuated. The subjoined sketch will therefore be read with interest; in addition it should be stated that the privateer Duke was commanded by Captain Woodes Rogers.

"People whose 'inward griefs and peristaltic woes' have been relieved by the power of Dover do not generally know to whom they are indebted for this excellent compound. Dr. Dover was a friend and probably pupil of the great Sydenham. He commenced practice in Bristol where, having made some money, he longed to make more. The roll of the College of Physicians tells us that he joined with some merchants in fitting out two privateers for the South Seas, in one of which, the 'Duke,' he himself sailed from Bristol, August 2, 1708. On the passage out they touched at the island of Juan Fernandez, where Dover, on the 2d of February, 1709, found Alexander Selkirk, who had been alone on the island for four years and four months, and whom Dover brought away in the 'Duke.' In the April following Dover took Ginaguil, a city or town of Peru, by storm. In December, 1709, the two privateers took a large and valuable prize, a ship of twenty guns and one hundred and ninety men, to which Dover removed from the 'Duke,' taking Alexander Selkirk with him as master, and finally reaching England in October, 1711. After this cruise Dr. Dover removed to London, where his practice soon became great. His patients, and the apothecaries who wished to consult him, addressed their letters to the Jerusalem Coffee-house, where at certain hours of the day he received most of his patients.—*Can. Jour. of Med. Science.*

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Companion to the latest edition of the British Pharmacopœia, comparing the strength of its various preparations, with those of the United States and other Pharmacopœias; to which are added non-official preparations and practical hints on prescribing. By Peter Squire, F.L.S. etc., assisted by his sons Peter Wyatt Squire, and Alfred Herbert Squire. Thirteenth edition. London: J. and A. Churchill, 8vo, 1882.

A work like this, of which thirteen editions became necessary in eighteen years, must be a useful work, and little need be said in commendation of it. The principal portion of the book is occupied with the medicinal drugs and chemicals arranged in alphabetical order, and comprising not only those which have been admitted into the British Pharmacopœia, but likewise a large number which have not been recognized by this authority, and many of which have come into more or less extensive use, since the last revision of that Pharmacopœia. In each case, the article is briefly characterized; its medicinal properties, uses, doses, and for poisonous articles, the antidotes are given, and the pharmacopœias are enumerated, by which the drug is recognized. Under the same head are also given all the pharmacopœial preparations, compared with those of the pharmacopœias of Europe

and of the United States, and followed by those preparations, which are not found in the British Pharmacopœia, but are to some extent prescribed.

It will be observed that the "Companion" partakes somewhat of the character of a universal pharmacopœia, and we think that few, if any preparations, having more than a local reputation, will be found missing. The book having been published before the present United States pharmacopœia made its appearance, all references apply to that of 1870; but the formulas are given by weight, for the better comparison with those of the pharmacopœias of continental Europe.

A very useful addition to the strictly pharmaceutical matters is found in the description of the more important medicinal springs of Europe, giving in a brief manner, the locality, altitude, climate, mean temperature, season, medicinal properties and analysis of the water.

Various other useful tables are added, also a very full general index, and a therapeutical index.

Proceedings of the North Carolina Pharmaceutical Association at its Third Annual Meeting, held at Winston, August 9 and 10, 1882. Wilmington, N. C. 8vo, pp. 64.

The pamphlet contains, besides the minutes proper, also the reports of the different officers and a number of practical papers read at the meeting. The officers for the current year are William Simpson, Raleigh, President; E H. Meadows, Newbern, V. O. Thompson, Winston, and F. C. Smith, Charlotte, Vice Presidents; J. C. Munds, Wilmington, Secretary; J. H. Hardin, Wilmington, Local Secretary, and A. S. Lee, Raleigh, Treasurer. The next meeting will be held in Wilmington on the second Tuesday of August next.

Report of the Commissioners of Pharmacy of the State of West Virginia for the years 1881-2. Wheeling.

The official report made to the Governor of West Virginia, under date of December 29, 1882, gives a clear synopsis of the work accomplished by the Commissioners. Among the 326 pharmacists, owners and assistants, are two ladies and eight graduates in pharmacy, seven of the latter being located in Wheeling. In eleven counties there are no registered pharmacists. Several persons who had been indicted for keeping drug stores without being registered, have left the State. The recently amended pharmacy law, which is now in full operation, has been found to work to the entire satisfaction of the Commissioners, the legitimate pharmacists and citizens of the State.

Pocket Therapeutics and Dose Book; with classification and explanation of the actions of medicines; minimum and maximum doses in Troy weights, with their equivalents in the metric weights; genitive endings of all medicines and preparations given in italics; index of common and pharmaceutical names; index of diseases with appropriate remedies; tables of solubilities; illustrations and examples in prescription writing; poisons, their symptoms, antidotes, and treatment; incompatibles and antagonists; useful hints to the prescriber, etc. By Morse Stewart, Jr., B.A., M.D. Third edition, revised and enlarged. Detroit: Geo. D. Stewart & Co., 1882. Price, cloth, $1.00; morocco, $1.50.

This long title of a little book of 240 pages, and of a size that it can readily be carried in the vest pocket, fully explains the contents, and also shows

that the information given must necessarily be of the briefest character. The posological table contains all sorts of specialties and secret medicines, the patent medicines proper excepted.

Legal Medicine. By Charles Meymott Tidy, M.B., F.C.S., Professor of Chemistry and of Forensic Medicine and Public Health at the London Hospital, etc. New York: William Wood & Co., 1882. 8vo. Vol. I, pp. 314; Vol. II, pp 298.

As far as we are able to judge, the work before us appears to cover the ground intended to be occupied. Beginning with the process of law, the nature and kind of evidence, the examination and the requisite preparations for giving evidence as an expert, the author next proceeds to the consideration of the signs of, and the appearance produced by, death. The question of personal identity is then considered with regard to a living person, a body dead a short time, mutilated remains, an entire or incomplete skeleton, and to burnt remains, involving, likewise, inquiries as to the age, stature, race, marks and other peculiarities of the different parts of the body, and the nature and origin of stains. A separate chapter is devoted to the characters of male and female skeletons and their parts, and to the causes and recognition of the various forms of monstrosity and hermaphrodism. Sudden death may occur from a variety of causes, singly or in combination, and in the latter case it may be difficult to say which cause contributed most to the fatal result. A post-mortem examination should be conducted with completeness and method, many precautions being required, not only for the purpose of noting everything that may possibly throw light on the subject under inquiry, but likewise with the view of guarding the ends of justice and the rights of the suspected or accused.

The second volume opens with a chapter on life insurance and the medico-legal questions connected therewith, and this is followed by inquiries, from the same standpoint, into the effects of cold and heat, burns and scalds, lightning, combustibles and explosives, and finally of starvation.

The author has evidently made the best of use of the literature on the subject, and presents the diversified and important matter in as clear a light as possible. The two volumes are Parts of Wood's Library of Standard Medical Authors.

The Brewer, Distiller and Wine Manufacturer, giving full Directions for the Manufacture of Beers, Spirits, Wines, Liquors, etc., etc. Philadelphia: P. Blakiston, Son & Co., 1883. 12mo, pp. 278. Price $1.75.

The aim, it is stated in the editor's preface, has been to render the book concise, without sacrificing any detail of value. A careful examination of the different subjects treated of will show that this aim has been constantly kept in view, and that a treatise has been produced which will be of value and usefulness to those who are interested in the manufacture and sale of alcohol and the various alcoholic liquids.

The subject matter is divided into six chapters on alcohol and alcoholometry, brewing and beer, cider, liqueurs and cordials, distillation of alcoholic liquors, wine and wine making. Each chapter opens with explana-

tory, historical or otherwise useful notes of general or special interest, before the various processes, apparatus, etc., are described and explained; a number of wood-cuts serve to render the description of apparatus perfectly clear.

Passing to the different subjects, we observe that Soemmering's process, recommended over seventy years ago, for depriving alcohol of water, is described. It consists in filling a bladder with the spirit, and suspending it in a dry locality. Many years ago, we have repeatedly experimented with this process, but with such ill success that we have abandoned it ever since; a contrivance described for keeping the bladder always full may probably produce more favorable results. The synthetical production of alcohol from olefiant gas, and its preparation from glacial acetic acid, though interesting to the chemist, cannot compete with the manufacture of alcohol from starches and sugars. The alcoholometric methods and tables are clearly explained, with the view of their practical application.

In the chapter on beer, the process of malting is well described, and a practical process of testing malt is given; likewise descriptions of the different kinds of beer, and of the various methods of brewing them.

We learn that sugars are extensively employed in brewing, that invert sugars are preferred to glucose for giving a full or "round" flavor to beers, and that unmalted barley, maize, rice and other grain is now largely used in brewing, much of it in a "gelatinized" or "peptonized" condition or torrefied. The substitutes for hops are merely mentioned as other bitter materials.

For the purpose of checking fermentation in cider, a common practice in Devonshire was to add a stuff called "stum," sold by the wine coopers, or an article called "antiferment" obtained from the druggists; of neither of these the composition is given. The method of sulphuration is, however, much to be preferred.

A large number of formulas is given for the preparation of liquors and cordials, mostly by infusion and solution.

Alcoholic liquors are distilled from malted and unmalted grain, from potatoes, artichokes, beetroot, beetroot molasses, carrots, cherries and other fruits. Koumiss is likewise briefly mentioned, and the removal of fusel oil is described. The finer qualities of *arrack* are distilled from the fermented juice known as toddy, palm wine of the cocoanut tree, Palmyra tree and other palms; another variety is made in large quantities from malted rice. *Brandy* is the distilled spirit of wine, and *eau de vie de marc* which is distilled from the lees of wines or the marc of grapes, is chiefly used for mixing with other brandy or for flavoring plain spirit. British or malt brandy is malt or other clean spirit with various additions. *Gin* is distilled from clean spirit and newly rectified oil of turpentine with or without other additions; turpentine conveys a plain gin flavor, juniper berries or oil gives a Hollands flavor, creasote imparts a certain degree of smokiness or whisky flavor, lemon and other aromatics a creaminess, fullness and richness. *Hollands gin* is made by fermenting malted bigg and unmalted rye and distilling after the addition of juniper berries, sometimes fennel, caraway and other materials being also added. *Rum* is obtained by distillation from the fermented skimmings of the sugar boilers, the drainings of the

sugar pots and hogsheads (molasses), the washings of the boilers and other vessels, together with sufficient recent cane-juice or wort (prepared by mashing the crushed cane) to impart the necessary flavor. *Whisky* is distilled from the fermented wort of grain or malt.

Wine is described as the fermented juice of the fruit of Vitis vinifera. American wines are only passingly mentioned and no notice is taken of the fact that they are largely made of varieties of grapes produced by cultivation from American species of Vitis. The preparation of still and effervescing wines and their management receive their full share of attention with the view of the practical application of those points which experience has demonstrated as essential for success; the same may also be said of the adulteration tests, where the author acknowledges that for the detection of artificial bouquet and flavoring a discriminating and sensitive palate are more to be relied on than chemical tests. The fruit wines and imitations of true wines have not been neglected; these are the products of an industry, which has a moral and, we think, also a legal right to existence only, when these products reach the consumer not under an assumed garb.

In summing up our conclusions we may state that this book which is the first volume of a series of technological hand-books, edited by John Gardner, F.C.S., introduces this series in an efficient and promising manner. The care in the selection of the material is evident and we believe it is not difficult to recognize the scrutiny which, as the editor informs us, the sheets have been subjected to, in the revision by gentlemen having practical knowledge of the subjects treated therein. The practical character of the book and its low price cannot fail to bring it into the hands of those who are interested in its contents.

OBITUARY.

Stephen Liversidge Talbot, a graduate of the Philadelphia College of Pharmacy, of the class of 1880, died in Providence, R. I., on the 15th of January, 1883. Mr. Talbot was a young pharmacist of promise. He was born in Dorchester, Mass. in 1853, and in early life showed indications of a love for study. Having obtained a good education, he sought opportunities for entering upon the study of pharmacy, and coming to Philadelphia, obtained successively positions with McKelway & Borell, R. F. Fairthorne, and Joseph P. Remington. His record at the examinations at the College was good; he stood high in general scholarship amongst a long list of fellow graduates, and to him was awarded the first H. C. Lea prize for the best thesis. After graduating, he opened a pharmacy in Providence, where he resided, and carried his enterprise on to a successful issue until the sudden summons called him home. He died of typhoid fever after a short illness of two weeks.